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THE PURPOSE, PREPARATION AND METHODS IN THE RECITATION

BEING A REVISED AND RESET EDITION OF
THE RECITATION

BY

SAMUEL HAMILTON, PH.D., LL.D.

SUPERINTENDENT OF PUBLIC SCHOOLS, ALLEGHENY COUNTY, PA.



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PREFACE

"THE RECITATION," under which this book was first published, received such a cordial reception on the part of teachers, and contained such a treatment of the essential principles of pedagogy, that there has been an urgent demand for its revision in the light of recent educational progress. Much has been eliminated, important changes have been made, new sections have been added, and a chapter on the Socialized Recitation inserted, necessitating a complete resetting.

This is neither a profound nor an exhaustive treatise on the recitation. It is only a series of easy lectures on the subject, prepared for young teachers. They are published in the hope that they will prove helpful to this class, and serve as a manual or guide in making the recitation a greater instrument of service. The discussion of the various themes in most cases is very brief, and often fragmentary. A full treatment of each would extend the limits of this volume far beyond its contemplated size. Emerson says, "The best part of a book is not what it contains, but what it suggests." And the whole discussion in this volume is intended to be suggestive rather than exhaustive.

Many of the professional books are too difficult for young teachers. They appeal to the more advanced students of pedagogy. This volume is an effort to aid the younger members of the profession by simplifying, and, if possible, clarifying for them, subjects usually regarded as difficult and obscure. Our effort has been to bring the whole discussion within the grasp of the average high-school graduate.

These lectures were not originally intended for publication. At first they existed simply as a set of outlines,

used as a basis for discussion in presenting this phase of the work to teachers. These outlines are given at the close of each chapter. They may be rejected as imperfect, illogical, and incomplete; but they served their original purpose, and will reveal to the student at a glance the author's analysis of each theme.

In the preparation of these lectures each was regarded as more or less complete in itself. And yet our purpose was to study the recitation in its unity, its parts, its methods.

In the revision of this work we are indebted to many sources, and especially to our first assistant, Mr. Charles E. Dickey, for critical readings and helpful suggestions.

This book goes forth with very modest claims. Its contribution to the great volume of pedagogical literature is very meagre. It may be even less, perhaps, than the proverbial twopence. But it is an honest effort to aid young teachers by a careful study of some of the practical phases of school work. Our aim was to be sound in theory, simple in treatment, clear and concise in presentation, brief and pointed in discussion, and, withal, practical and helpful. To what extent these ends have been attained the reader must decide. With the poet we are ready to exclaim,

"What is writ is writ.
Would that it were worthier."

THE AUTHOR.

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THE PURPOSE, PREPARATION AND METHODS IN THE RECITATION

CHAPTER I

GENERAL VIEW OF THE RECITATION

THE terminology of a subject is important. Words often have various meanings, and the sense in which they are used in any discussion determines the exactness of the thought conveyed. Vagueness of meaning and confusion of mind are sure to follow indefiniteness of expression. In this discussion, then, it is important that the sense in which the term "recitation" is used be clear and definite.

1. THE TERM DEFINED

In pedagogical literature the recitation is always regarded as a process or an exercise. Writers, however, do not agree as to the exact meaning of the term, consequently they differ in regard to its content and its limitations. Some use the term in a literal, others in a general sense.

Its Literal Meaning.—Literally speaking, to recite is to tell or say again what was formerly learned. This may be done in two ways. First, by telling what was learned in the exact language of the text; or, second, by stating the substance of it in the pupil's own words. The latter is always preferable. It at least requires some thought and develops some power of original expression, while the former may be only a memory recital of words not understood. While *memoriter* recitations, meaningless to the child, are always to be avoided, yet it is wise to have the learner incorporate into his own phraseology as much of the choice language of the text as he can

understand and use. This is one of the sources from which he enlarges and enriches his vocabulary and acquires the terminology of a subject. Strictly speaking, then, the recitation is the restatement of what was formerly learned either in the words of the text or in the child's own language. This is the historical meaning of the term. It has come down to us from the time when school exercises consisted mainly in repeating in the exact language of the text what had formerly been memorized.

The General Meaning of the Term.—But the term "recitation" has a larger meaning than its etymology and its history suggest. Writers generally use it to embrace any and every school exercise in which the teacher teaches, tests, or trains, or in which the child acquires knowledge, power, or skill. The process is thus made to embrace almost every exercise except the formal examinations. This is the general meaning of the term, and while it is wise ordinarily to use words in their etymological sense, yet in this discussion we must depart from that rule and use the term in its generally accepted sense.

2. PARTIES TO THIS PROCESS

As a process, the recitation is mainly twofold. It includes both teaching and learning. It, therefore, implies the active participation and coöperation of at least two persons, a teacher and a learner. The one presents, the other grasps; the one questions, the other responds; the one directs, the other does; the one gives, the other receives; the one teaches, the other learns; the one inspires, the other is inspired. Both must think and grow, and each must aid the other in attaining the desired end.

The Teacher's Part.—The teacher's part is to teach, to test, and to train; to lead, to guide, and to inspire; to correct errors, to form habits, and to mould character. This is accomplished through the wise use of all or part of the following means:

(a) By preparation of the child's mind to receive the subject matter.

(b) By preparation of the subject matter.

(c) By presentation of the subject matter.

(d) By explanation and illustration of the subject matter.

(e) By suggestions about the subject matter.

(f) By leading the child to think about and understand the subject matter.

(g) By giving the fullest opportunity for individual and class initiative.

(h) By what the teacher is and by what he does.

The Pupil's Part.—The part of the pupil is to acquire knowledge, power, or skill, to form right habits, to exercise fully and freely his initiative, and to grow in nobility and purity of character. These ends are attained through some or all of the following means:

(a) By examining the subject matter.

(b) By understanding and interpreting it.

(c) By assimilating it.

(d) By remembering it.

(e) By applying and using it.

(f) By the free exercises of his initiative.

All these may be summed up by saying the intellectual and moral growth of the child is determined by what he thinks, feels, and does. For thoughts create desires, desires lead to action and effort, and these are the instruments both of scholarship and character. As a man thinks, so he should feel and act, and as he feels and acts, so he is. Marcus Aurelius says, "The soul is dyed by the thoughts"; and Bailey sings,

"We live in deeds, not years; in thoughts, not breaths;
In feelings, not in figures on a dial.
We should count time by heart-throbs. He most lives
Who thinks most, feels the noblest, acts the best."

The Class's Part.—In the schools of a democracy the class as a social unit has an important part in the recitation. It must not only offer opportunity for social unity, class initiative, class coöperation, class spirit, class control, and class teamwork, but actually foster it. It ought to operate as a democratic unit in which all participate, all direct, and all share in its successes or failures. The means by which these ends are attained are as follows:

(a) By permitting the full and free exercise of individual initiative.

(b) By group initiative exercised in planning, organizing, assigning, and directing the work of the recitation.

(c) By group control sharing with the teacher the responsibility of class discipline.

(d) By the democratic organization and management of group activities that lie entirely outside of class or school affairs.

3. IMPORTANCE OF THE RECITATION

The recitation is an important school exercise. In the lower grades, where the pupil is unable by his own effort to make much preparation, it is by far the most important. And in what it does for the child in the advanced grades and in the high school, it ranks next to the art of study. The class-room is the enchanted ground of pedagogy; the sacred spot where two souls meet, each to influence and to be influenced by the other; the trysting place of truth and power, where they loiter that they may be seized and used by the child who has the courage to make the capture; the mart of mind, where earnest effort is the only coin needed to purchase a whole kingdom of moral, intellectual, or spiritual truth. The recitation is the very gateway of opportunity, both to the teacher and the child. To the teacher it is an opportunity to impart knowledge, to guide

effort, to develop power, to form habit, to mould character, to deepen impression, to train in the art of study, to inspire the child with a love of learning, and to fix forever his habits of thought and expression. And to the child it is an opportunity to acquire knowledge, power, and skill, and to catch glittering glimpses of the great sunlit valley of truth from the glowing hilltops of the teacher's inspiration.

The Recitation and Habits of Study.—The recitation is important because its character will, to a great extent, determine the child's habits of study. Children generally do what they are expected to do; they always do what the teacher or the class unit requires them to do. Right action leaves a tendency to repeat itself, and oft repeated, forms habit and crystallizes into character. Small expectation is the husbandman of a scant crop. The teacher who expects and who accepts imperfect preparation, superficial work, a hazy conception of truth, and a careless expression of it, will generally get them. And these are the little foxes that are destroying the tender vines in many a school-room vineyard that would otherwise be fruitful.

Habits of Thought.—The recitation is important because it will help to determine the child's habits of thought and expression. A memory recitation without thought is always of doubtful value, but one with hazy thought and careless expression on the part of teacher and child is detestable. Careless thinking produces careless habits, both of thought and expression; while clearness and vigor of thought give accuracy and tenacity to memory, and clearness and vigor to expression. All true teaching holds clearly and distinctly before the mind of the child the thing he is to see and to think. It aims to give

accuracy and definiteness to the thought, and force and clearness to the expression. The best fruit of the recitation is not a knowledge of the subject matter, but rather certain qualities of mind. These are accuracy of observation, distinctness of perception, clearness of apprehension, completeness of apperception, correctness of expression, and all those mental qualities that are summed up in what we call the child's habits of thought and expression.

Inspires Love of Learning.—The recitation is important because it inspires the pupil with a love of learning. It is largely during its progress that the child lights the torches of his inspiration with the sacred fire that always burns on the true teacher's altar. Life begets life, interest fires interest, inspiration springs from inspiration. The flashing eye, the glowing heart, the beaming countenance, the bristling thought, the burning word, and the all-consuming love of truth in a great teacher, await only the opportunity of the recitation to arouse the dormant energies, to awaken the slumbering activities, to call into exercise all the powers, to enkindle a love of learning, and to fire with zeal and enthusiasm every member of a class.

Every good recitation arouses, stirs, stimulates. It fills the mind and heart with a burning zeal. It lights the torches of desire with a never-quenching flame of enthusiasm. It touches the electric buttons of a child's inspiration, and sends him out into life an active, inquisitive, aggressive student, eager to track truth to its secret lair in earth, or sea, or sky. And so eager, so enthusiastic is he, that he will follow the trail at any cost, through any gloom and over any obstacle, to the secret cavern where it was first hid by the Almighty.

Such is the value of the recitation when a real master stands back of the teacher's desk, when a high priest of mind, matter, and method presides at the sacred altar.

4. CHARACTERISTICS OF A GOOD RECITATION

It is difficult to specify the essential characteristics of a successful recitation, as they will vary more or less with time, place, and topic. But a few general suggestions may be made that will throw some light on the subject at important points.

Length of Recitation.—The recitation should be short. This is especially true in the elementary school. Attention consumes brain cells rapidly. Children cannot give vigorous, mental action and prolonged attention to any subject. Good teaching burns up the accumulated store of mental energy in a short time. The point of brain fatigue is soon reached with little children, and those housed in overheated and poorly ventilated rooms, and with all who are deprived of frequent periods for play in the open air. These periods give the mind time to restock itself with energy. Prolonged attention, therefore, without reaching the point of brain fatigue is impossible. And when this point is reached, all further effort is useless. This is why, paradoxical as it may seem, some fairly good recitations could be improved by shortening them.

The length of the recitation will vary according to the grade, from five minutes in the primary, to perhaps forty-five in the high school. What then shall determine its length?

(a) The age of the pupils.

(b) The temperature and purity of the school-room atmosphere.

(c) The mental energy of the pupils disposable at that time.

(d) The extent of the preparation made for it.

(e) The energy-consuming power of the teacher and the subject matter.

These principles may need some explanation. It is evident that every recitation in which little children take part should be short. It is equally clear that if the air is vitiated and overheated the period must be short, since these conditions tend to stupefy the child, to suppress his interest, and thus render attention almost impossible.

Child study has taught us that at certain hours of the day the pupil has more vital energy than at other times. From nine to eleven, and from two to half-past three the amount of disposable energy for any effort is greater than at other times. As a result these are the periods for long recitations and for the study of difficult subjects. It would be unwise to make the recitation long immediately after the noon hour, when the digestive organs are draining the reservoirs of the child's vitality in their effort to digest his dinner. A short period at that time easily exhausts the supply and leaves the child without power to apply to the work at hand.

A leading purpose of the recitation is to train the pupil to habits of study. And while one must often teach the child in the primary grade before he is able to study, yet in higher work, a good teacher will gauge the length of the recitation at least partly by the extent of the preparation made by the pupils.

A good recitation is generally shorter than a poor one. Good teaching is vigorous. It consumes the child's stock of vitality rapidly, while poor teaching calls for its expenditure at a slower rate. Running exhausts an athlete quicker than walking. He may walk for hours, but the periods for running must be short. In like manner the good recitation is completed in a reasonable period of time.

Mental Movement.—The recitation should have a brisk mental movement. This is necessary to sustain the interest and hold the attention. Tompkins defines the recitation as "a movement of thought on a given theme." The flow of thought should be strong and rapid, not slow and

sluggish. The mind of the child should be carried rapidly from point to related point. Skillful questions given at intervals of one minute each may be very helpful, but the same, given at intervals of fifteen seconds, may be much better. The mind must move; it cannot rest at any point but for a moment without wandering. In a recitation characterized by a sluggish flow of thought, enticing suggestions dissipate interest, and irrelevant associations lead the mind away from the point at issue. But a brisk movement sustains the interest and holds the attention. The mind is kept busy noticing and discovering the related points as presented, and has no time to wander into forbidden fields. The movement of the thought is guided and pushed briskly forward by questions, suggestions, explanations, and directions. Such a recitation is a good remedy for stupidity. It develops alertness of mind, a quick perception, and a prompt mental response.

But there is another side to this question of movement. There is a danger of being too brisk sometimes, in not giving a slow mind sufficient time to focus its stock of related facts upon the new idea in order to give it interpretation and place. This is a danger point to be noticed and avoided.

How then shall we gauge the mental movement, the flow of the current of thought in a recitation? This question cannot be definitely answered, but the teacher should see that the mental movement is brisk enough to sustain the interest and hold the attention; brisk enough to demand and develop that alertness of mind that is the essential characteristic of the learning process, and to destroy that sluggish mental pace that, long continued, makes the slow pupil stupid.

Essential Qualities.—The recitation should have a clear, strong, logical presentation of the subject. These are essential qualities, but they are only external phases of

presentation. There must be an inner activity responding to the external stimuli. This activity must be aroused, sustained, and directed, or the external presentation of the subject matter will be devoid of results.

For a more extended discussion of this subject the reader is referred to the lecture on presentation.

Adapted to the Child's Needs.—The recitation must be adapted to the child's needs. The work should be pitched at the point of the child's mental grasp at which it gives its richest return. It is well to remember that "strength comes from wrestling," and that swimming against the current gives more strength than swimming with it. The best return comes, not from mental exercise, but from that grade of mental action that is pitched at the highest level of the child's best effort. The race horse that is never pushed to his best efforts seldom increases his speed. So the child that works at a pace of effort too easy for him gets little return.

Good teaching loads the lesson with truth that is neither too light nor too heavy for him, but just of sufficient weight to test his strength. It holds the truth above him, not within easy reach, nor yet beyond his grasp, but just where it will require a vigorous effort to seize it. It strives to keep the child's mind working at least part of the time on the highest level of his best effort.

5. INDICTMENTS AGAINST THE AVERAGE RECITATION

If the average recitation were on trial it would not be difficult to frame some serious indictments against it.

Indefiniteness of the Recitation.—The average recitation is too indefinite. It is often so aimless that it is almost worthless. It lacks purpose, point, aim, edge, object, and end. A great telescope pointed into space and focused on nothing reveals nothing. To prove its

worth it must be trained on some objective point. So the recitation to be of value must have an aim. The teacher who is not trying to do anything in particular accomplishes very little. And many recitations simply require the children to say over again their lessons in the most aimless way, and therefore with little or perhaps no profit to them.

Three results, the unpedagogical influences of which are apparent even to the casual observer, come from this aimless work. (*a*) It wastes much valuable time, consumes vast quantities of mental effort, and gives practically nothing in return. (*b*) "It degrades the noble art of teaching into a lifeless stereotyped trick, deadening alike to both teacher and pupil." (*c*) It encourages the growth of stupidity in the children.

Stupidity is a growth. It can, therefore, be encouraged, and aimless recitations often teach it more than they teach anything else. Aimless work is automatic and mechanical. One can do it without thought. As a result it suppresses spontaneity and interest, induces indifference, lulls into mental inactivity, and thus furnishes the very quality of school-room atmosphere in which stupidity thrives best.

Individual Thinking.—The average recitation too often fails to stimulate the individual thought of the child. Mental exercise is the law of mental growth. We learn to think by thinking, and the recitation that fails to make the individual think has not done its best for him. The average recitation deals too much in empty words and not enough in thought. The king in "Hamlet," while trying to pray after the murder of his brother, cries out in despair :

"My words fly up, my thoughts remain below :
Words without thoughts never to heaven go."

And words without thoughts are just as useless in the recitation as they are in prayer. A child must do more than tell what the text says ; he must think thoughts sug-

gested by it. The subject matter is the material with which to start and operate the thinking process. It is well to know the subject matter, but it is better to think about it. Not the author's thought, or the teacher's thought, but the child's own thought, occasioned by the exercise of his mind upon the material of the lesson, is of vital importance in all higher grade classes. A memory disgorgement of undigested facts is a travesty and a sham; an empty farce and a burlesque on the noble art of teaching. "Knowledge comes from observing; wisdom comes from thinking." And the mind that thinks clearly and vigorously about the subject matter is rewarded by increased strength and wisdom. The teacher must test preparation, but in the higher grades and the high school the recitation must not stop at that point. Indeed the valuable part of it begins there. The pupils in such grades, if they have made proper preparation, ought to know the surface subject matter of a lesson so well that most of the recitation period can be given to a discussion of it. Instruction in the higher grades should crystallize into individual opinions, beliefs, and conclusions about the subject matter. The mind of the child must be put to work upon the material of the lesson, and the mental action thus occasioned must be guided until certain ends are reached. A recitation may have every other essential quality, but if it lacks individual thought on the part of the pupil it is a failure. For thinking educates, and nothing else can be substituted for it.

Fails to Instruct the Child.—The average recitation is subject to serious charges because it so often fails to instruct the child. It tests the pupil's knowledge of the subject, but it does not instruct him. Indeed many recitations are only examinations. In teaching, the current of truth, so to speak, is directed toward the child. The aim of the teacher is to have the class see, grasp, or comprehend something. In an examination the very opposite takes

place: the current of truth is reversed and flows from the class toward the teacher, as he draws from them their knowledge of the lesson. This weakness is very prevalent. We examine, examine, examine, but we seldom teach. And our school work would be greatly strengthened if the average recitation were devoted mainly to teaching rather than to testing.

The Time Element.—Another and most serious indictment against the average recitation is that there is too much waste time in it. This is due to inattention, to repetitions, to senseless questions, and to the habit of reviewing without profit to the child what he clearly understands. One recites and makes progress while many wait and waste time. The time devoted to the recitation is out of all proportion to the results that come from it. This is what President Harper had in mind when he said, "The recitation is too expensive." And waste time in any school exercise is a most serious charge against it.

Social Unity.—Many class recitations lack social unity. As the aim of public education in a democracy is to prepare for civic efficiency, this is a vital defect. If the work of the recitation fails to develop class spirit, group coöperation, and teamwork in control and management, it is fundamentally weak. To prepare pupils for active and efficient participation in the affairs of the community and the state, the work of the class in the recitation, as far as possible, should be democratized. Interest in class spirit, class progress, class management, and class affairs, exercised in a free democratic manner, is the best preparation for interest and effective participation in the affairs of democracy. A recitation may be unsatisfactory at many points, but if it lacks social unity and social coöperation, it will fail to make its expected contribution to civic efficiency in a democracy.

The recitation is a valuable instrument for good. But it is robbed of its vitalizing power when it lacks aim, individual thought and the investigating spirit, when its length is not adjusted to the needs of the child, and when by poor class management the teacher fails to make each child's time purchase its equivalent in results.

TOPICAL OUTLINE

I.—THE TERM RECITATION DEFINED.

1. Its literal meaning.
2. Its general meaning.
3. The recitation defined.

II.—PARTIES TO THE PROCESS.

1. The teacher's part.

- (a) To teach, test, and to train.
- (b) To lead, guide, and inspire.
- (c) To correct errors, form habit, and mould character.

These ends are attained :

1. By preparation of the mind.
2. By preparation of the subject matter.
3. By presentation of the subject matter.
4. By explanation, suggestion, and illustration.
5. By leading the child to think about the subject matter.
6. By what the teacher is, and what he does.

2. The pupil's part.

- (a) To acquire knowledge, power, and skill.
- (b) To form right habits.
- (c) To grow in nobility and purity of character. These ends are attained :

1. By studying the subject matter.
2. By understanding and interpreting it.
3. By assimilating it.
4. By remembering and applying it.
5. By what he thinks, feels, and does.

3. The class's part.

- (a) To develop the spirit of class unity and social coöperation. This end is attained :

1. By permitting the full and free exercise of individual initiative.
2. By group initiative exercised in planning, organizing, assigning, and directing the work of the recitation.
3. By group control sharing with the teacher the responsibility of class discipline.
4. By the democratic organization and management of group activities that lie entirely outside of class or school affairs.

III.—IMPORTANCE OF THE RECITATION.

1. It determines the child's habits of study.
2. It determines his habits of thought and expression.
3. It inspires the pupil with a love of learning.

IV.—CHARACTERISTICS OF A GOOD RECITATION.

1. It is short.
 - (a) Length of period determined:
 1. By the age of the child.
 2. By the temperature and purity of the school-room atmosphere.
 3. By the amount of mental energy disposable at the time.
 4. By the extent of the pupil's preparation.
 5. By the energy-consuming power of the teacher and the subject matter.
2. It has a brisk mental movement.
 - (a) To sustain interest and hold attention.
 - (b) To demand and develop alertness of mind.
3. The presentation is clear, strong, and to the point.
4. It is adapted to the child's needs in matter and method.
5. It develops the spirit of class unity and social coöperation.

V.—INDICTMENTS AGAINST THE AVERAGE RECITATION.

1. It is too indefinite, and thus tends:
 - (a) To waste time.
 - (b) To degrade the art of teaching.
 - (c) To cultivate stupidity.
2. It fails to stimulate individual thought.
3. It fails to instruct the child.
4. It wastes too much time.

CHAPTER II

THE SOCIALIZED RECITATION

Self-Activity as the Instrument and Measure of Individual Development.—Self-activity is the instrument of the child's education. It alone gives the experiences that are really educative. His own effort—physical, mental and moral—is the vital agency; without it his education is impossible. The school with its teachers, books, and recitations is only an opportunity for this activity. If he attends it and works in it, he takes advantage of his opportunities, but in the strictest philosophical sense it is his own observations, his own thought, his own effort, that is, his self-activity that is the fundamental requisite.

This self-activity is also the *measure* of the child's education. As he puts forth effort, so shall he be crowned with power. This is the great law of the school. If he works much, he gets much; if he neglects or avoids this effort, he gets little. The wise teacher sees clearly that he who goes to the education market with a small coin of time and effort will carry home his purchases in a very small basket. But this wisdom must not be passive. It must provide ample and equal opportunity for the self-activity of every pupil.

Class Unity as a Civic Agency.—But the child is more than an individual; he is also a member of society and as such must learn to coöperate with his fellows for the highest good of all. Class instruction, therefore, while it keeps in mind the self-activity of the individual and his highest possible training, must also develop class spirit, class coöperation, and team work. This spirit of co-operation for the highest good of all is the very essence of

civic efficiency; for after all, democracy is only a form of government by which the people, through civic coöperation, eliminate existing evils and rise to higher planes of moral and social efficiency. And the great agency through which democracy raises itself to these planes is the education of the masses.

Every class, then, is a social unit. It is composed of individuals who must develop as such through self-activity, but at the same time it is responsible for team work, class spirit and social coöperation. It is this principle that makes a democratic unit of the class and thus prepares its members for citizenship in the democratic state. For social coöperation and team work in the school naturally lead the way for civic and social coöperation in the state.

1. GUIDING PRINCIPLES

From this brief discussion two guiding principles may be formulated:

The class recitation must arouse and direct the child's self-activity as the instrument and the measure of his education.

In a democracy the class recitation as a civic agency must arouse and direct class spirit, social unity and class coöperation.

The first principle is always present in good class management as a prerequisite of the highest development of the individual; the application of the second in modern practice is termed the *socialized recitation*. The term is a new one in the literature of school management, but the principle which it applies has always been more or less present in high-grade class instruction. In recent years this principle has been carefully scrutinized, emphasized, and applied in the interests of civic efficiency and practical democracy. To cause the term to emerge from the mist and fog of

uncertainty and to aid the teacher in an effort to comprehend and use and socialize recitation, a few of its salient features may be outlined and briefly discussed.

2. SOME FUNDAMENTAL FEATURES OF THE SOCIALIZED RECITATION

Individual Participation.—In the socialized recitation every pupil, or as many as possible, take an active part. This is required in accordance with the principle of self-activity. Every child must have an equal opportunity for self-expression. He may acquire some disconnected information by hearing others take part, but to be sure that his mind has been stimulated along the lines of association, comparison, and assimilation, he must take an active part in the recitation.

It is obvious that if the class is large and the period short, all members cannot take an oral part each day, but in a group of lessons covering a short period, each must be accorded his full opportunity. And even when an oral part in a particular lesson with each member of a large class is impossible, each pupil, through interest and attention, may be stimulated to think with the class, follow critically the discussion, and mentally assent to, or dissent from, the conclusion. The vital thing in this self-activity is not the mere acquisition of facts or listening to their presentation, but rather what the individual mind does with them in the effort to comprehend, assimilate, and make them a part of its mental working equipment.

Social Coöperation.—The socialized recitation develops the principle of social unity—unity of spirit, unity of purpose, and unity of action as expressed in cordial coöperation. The class must be a democratic unit, animated by a class spirit that functions in coöperation and team work. This is the principle that makes the family, the church, the ball team and the political party a social unit

working for the highest interests for which each was organized.

To make good citizens is the only justification for a free school system. Society has no right to tax the property of the individual for the support of a free school unless that school makes some contribution to the general welfare. It is the dominance of this principle that has called into classroom methods the attempt to socialize the recitation, as the special agency of democracy.

We are accustomed to say that the state has a right to educate, and while we use the phrase glibly we scarcely pause to reflect upon its meaning. What is the state that has a right to educate? Evidently it is not the square miles of territory that constitute the geographical state, nor the group of men that embody the government of the state. In its final analysis the state is the body of people occupying a given territory with definite boundaries, and exercising in some way the principle of sovereignty. This is the free, democratic, civic, sovereign state that has a right to educate.

The commonwealth, the county, the city, the incorporated town, or the township is a state; and each as a civic and social unit has some specific part to play in organizing and managing our system of education. Each of these groups is a small democracy organized for educational and civic control and for the highest social good.

It must be evident to all that every school and every class, to operate for the highest democratic good, must in its organization and control be a miniature democracy, developing the principle of coöperation and team work. The same is true of every school group or class. It, too, is a social unit, and in the schools of a democracy, must function as such in order that its members may be prepared to take their part in the civic activities both in the community and the commonwealth. It is this dominant idea of democracy in education that is urging the teachers of the

schools everywhere to socialize—which is only another word for democratize—the recitation.

Class Control.—The socialized recitation must permit as large a measure of class control and self-determination as is consistent with the highest good. A distinguished statesman has defined democracy as “organized self-control,” and ideal class discipline is only another name for organized self-control. The class as a social unit must be given ample opportunity to exercise the principle of self-control and self-determination. This is its civic and social right.

This does not mean the elimination of the teacher in class management. He is always a factor, perhaps the factor in class discipline and class control. But his proper place is that of a guide and helper, one who counsels, suggests, reasons, and directs, and not a tyrant who dominates. And just as society always must have the sheriff and the policemen for those who place their rights expressed in terms of lawlessness above those of the masses, so the teacher must sometimes bring the wrongdoer to the court of justice. But that court as far as possible ought to be the class rather than the teacher. Offenses under class control are social, committed against the class rather than against the teacher.

Socialized self-control in class action is a prerequisite of the highest ethical development of the individual. It is a truism to say that character is the great aim of education. Teachers have been accepting this as a great principle in theory, yet, in many cases they have been making the development of the individual's character almost impossible because of a sort of military control. The slave who must do right, not because he loves it and desires to comply, but because tyrannical authority requires it, never develops character through such slavish obedience. So the pupil in

the class who obeys a dominant personality not because he desires to do so, or because his compliance is for the good of all, but simply because he must, receives little ethical development. Only the voluntary action of the pupil who is free to act and who complies with class regulations because they are right and in the interests of social welfare is rewarded by real growth in character. The socialized recitation self-directed and self-controlled results in the largest measure of this growth and in the highest and best development of character among its members.

This principle of self-control is seen in class games and sports. All admit that the school is the melting pot of democracy; but we are just beginning to see that the fusing of the social factors takes place far more rapidly in games and sports and in the socialized recitation than in those controlled by the forceful personality of a teacher. Under the latter the pupil is on dress parade. He does not reveal his real character; but in the social recitation and in all class organized and class controlled activities the pupil is given the opportunity to unmask himself, reveal his real personality, and in a voluntary way make his contribution for the highest good.

Individual and Class Initiative.—The socialized recitation must always afford full opportunity for the development of the largest measure of initiative on the part of the pupils. This is necessary both in the interests of the self-activity of the individual and the social unity of the class. Initiative is the power that plans, installs, organizes, sets on foot, directs and achieves; the ability to size up the situation, to grasp existing conditions, to discover what ought to be done in any situation or emergency, and to apply the remedy by doing the right thing in the right way and at the right time. Next to the training that lifts the

child above the line of illiteracy, it is perhaps the most important.

This initiative is mainly of two general types—individual and class or group. The first of these types is vital in the education of the individual. It is this quality which gives society its great leaders, men whose minds can visualize great projects, organize them, and direct their activities in the interest of social, industrial and civic progress. This type of leadership is seen everywhere in the realm of industrial enterprise and in the world of business and social affairs. Big business and great enterprises are as a rule organized by the genius of a few great leaders which is only another name for individual initiative. Civilization and human progress are always deeply indebted to such leadership. And the recitation must always foster and never suppress the development of this kind of initiative.

But group or class initiative is equally important, if the class as a social unit is to function through social co-operation and team work in the interest of democracy. This group initiative may be fostered and developed through a class organization with a president and a secretary by which it may plan and direct the work of the recitation, and designate the members who are to lead. This initiative may select certain themes for class discussion and assign phases of investigation along collateral lines to certain individuals. This must be done with the fullest freedom for individual initiative to add to, suggest, correct, assent, dissent, or to offer a different course, and thereby reach a different conclusion. Class initiative is always aided and directed by that of the leaders and should always foster individual initiative.

This group initiative may be cultivated through activities that lie entirely outside the limits of the class recitation. The literary society, the athletic club, the ball team, a thrift

club, a local branch of the Red Cross, an organization to relieve suffering in some part of the world, a club to study plan and urge community activities and local improvements, and any other groups that act as democratic units. Such action always affords the finest opportunities for the exercise of both individual and group initiative, and thus cultivates that social unity and class coöperation which prepared both the individual and the group for civic participation and civic efficiency in the affairs of the community and the state.

3. THE SOCIALIZED RECITATION APPLIED TO TOPICS AND PROJECTS

The Socialized Study of a Topic.—The socialized recitation may be used in the study of a topic or in the development of a project. When the study of a topic is introduced for the first time, the recitation period should be devoted largely to its analysis. This may include a tentative outline of the major and minor points, and the anticipation and assignment of problems. The general outline should be constructed by the members of the class working together while the individual problems should be worked out by the individual members of the group.

In the study period the pupils work as a socially organized group. Books of reference are freely used, and impromptu discussions and conferences are carried on. After a reasonable time has been given to the investigation of the topic under consideration a recitation is called and reports are made. Discussions follow as to the validity of the procedure; eliminations of irrelevant data are made here, additions there, and after the outline has been corrected and approved, additional work is done. Eventually the work is summarized, and conclusions determined.

In planning the work pupils may act singly, or in small

groups. Each pupil should construct a tentative outline to guide his observations or reading, and then prove or disprove his beliefs through evidences obtained through investigation, study or conversation. Occasionally, the pupils may be required to write their reports; it will help the backward and curb the eager.

The plan here suggested implies a student organization. This may be very simple. It may include only a leader. It does not, however, eliminate the teacher. While he must remain inconspicuous, he must nevertheless be the power behind the throne. He must stimulate the class to originate ideas and to raise problems. He must lead the pupils to compare and test their results, offer suggestions as to sources of materials, encourage the backward, and in cases of disagreement, act as umpire. He must keep everything moving and see that unity of purpose is maintained and social progress guaranteed.

Socialized Development of a Project.—A project is a purposeful, schematic, useful activity, growing out of a felt need in some situation; it is generally self-imposed, and in response to the native instincts and interests of the pupil. Its goal is always objective and complete unity. It involves many problems, each of which might be regarded as a subordinate project within itself. This nature of the subject makes it possible for a group to work upon a project. Each then selects his own small project and works it out in accordance with the general scheme. The big project thus becomes the individual project of each.

The purpose of the project method is to build up big units of thought through properly correlated ideas growing out of experiences, knowledges and skills. It aims to attain this purpose through the interests, instincts and preferences of the pupil, which must be accorded the highest place in the realm of motivation.

In the development of a project a period may be devoted to the selection and planning of the project and the anticipation and assignment of problems. The general outline is usually constructed by the members of the class working together as a socially organized group. At one time they are planning and outlining the project; at another time they are raising questions in its development; and, finally, they assign the problems among the individual members of the group.

After each member of the class or each small group has been given a limited time to work out the problems, the class is called to check up results. Various aspects of the project are presented and discussions as to the validity of the procedure take place. During this exercise many changes may be agreed upon, new problems may be raised, additional assignments may be made, and the class again directed in its investigations. This procedure continues until the project is completed.

It is apparent that considerable pupil-freedom is contemplated in this method of teaching. Pupils must be permitted to work in small groups, be free to move about the room to find materials, or to make excursions to fields, factory, or shop, if occasion requires it.

The Teacher's Part.—He must be a stimulator and an umpire. He is the power behind the throne. He stimulates the class to originate and plan projects and to raise problems. He leads the pupils to compare and test results, offers suggestions as to sources of materials, encourages the backward, and in cases of disagreement acts as umpire.

TOPICAL OUTLINE

I.—GUIDING PRINCIPLES OF CLASS RECITATION.

- I. The class recitation must arouse and direct the child's self-activity as the instrument and the measure of his education.

METHODS IN THE RECITATION

2. In the schools of a democracy, class recitations as a civic agency must arouse and direct class spirit, social unity, and coöperation.

II.—SOME FUNDAMENTAL FEATURES OF THE SOCIALIZED RECITATION.

1. All of the individuals take an active part.
2. The class functions as a democratic unit, acting through the principle of social unity and cordial coöperation.
 - (a) General welfare as the ultimate right to tax property.
 - (b) The right of the State to educate.
 - (c) The class acting as a miniature democracy.
3. The socialized recitation permits a large measure of class control and self-determination.
 - (a) This does not eliminate the teacher.
 - (b) Self-control as a prerequisite for ethical development.
4. The socialized recitation fosters individual and class initiative.
 - (a) Initiative defined and classified.
 - (b) Individual initiative as the basis of industrial and social progress.
 - (c) Group initiative as a civic agency.
 - (d) Group initiative extended to activities that lie outside the recitation.

III.—THE SOCIALIZED RECITATION APPLIED.

1. To the study of topics.
 - (a) Planning and assigning the work.
 - (b) Implies a class organization.
2. To the development of a project.
 - (a) Terms defined.
 - (b) The purpose of the development of a project.
 - (c) Checking up the results of project work.

IV.—THE TEACHER'S PART IN SOCIALIZED ACTIVITIES.

1. To stimulate, guide, counsel, advise, and act as umpire.

CHAPTER III

PURPOSE OF THE RECITATION

The secret of success is constancy to purpose.—BEACONSFIELD.

I. AIM OF THE RECITATION DISCUSSED

THE purpose in any school exercise is of first importance. Aimless work is fruitless and therefore useless. The hunter who shoots with his eyes shut seldom brings home any game. And the teacher who blindly and without aim "hears the children say their lessons," meets with the same measure of success. A blind man does not make a good carpenter. He cannot saw to the line, or hit the nail on the head. And a purposeless recitation is scarcely more effective than a blind carpenter.

A Vital Exercise.—Aim in the recitation is vital. It tells where instruction should begin, the course it should take, how it should proceed, and when it should end. A good recitation begins at the right place, proceeds in the right way, and closes when its purpose is accomplished. And to do this it must have a definite beginning, a definite plan of procedure, and a definite aim.

Wasting Time.—Aim saves time. "A straight line is the shortest distance between two points," and in the recitation definite aim is the compass that marks out that line. "Sailing not drifting" is the teacher's motto, and to do this one must follow the polestar of purpose from start to finish. "A lame man on a straight road," says Bacon, "reaches his destination sooner than a courier who misses his way." Without a definite aim the teacher is likely to lose his way, to wander about, and thus waste much valuable time. And "nothing," says Theophrastus, "is more

precious than time, and those who misspend it are the greatest of all prodigals."

Waste of Energy.—Aim, too, conserves energy. The gun that is fired without aim wastes its shot. A thousand such guns discharged at random in the neighborhood of a fortress accomplish nothing. A few well aimed shots even from smaller pieces are far more effective. A wise military man conserves his forces by concentrating them upon the weakest point in the enemy's lines, the point where he hopes to make his attack successful. So a good teacher saves his energies by concentrating them upon the desired end. Scattered effort dissipates energy, but concentration and aim conserve it.

Ends and Means.—The end always determines the means. What you will do in a recitation is always determined by what you want to do, by what you are trying to do, and what you are trying to do always determines what is necessary to reach the desired end. The painter who expects to paint a high building selects a long ladder. If the traveler is going to a distant city he selects as a means of transportation a train, an automobile, or a boat. But if his destination is some farm-house nearby, he selects a horse and buggy. So the end in a recitation determines the means. The teacher selects the method and devices that seem to promise aid in attaining the desired end.

Testing the Means.—The aim tests the means. It enables one to try all things and to hold fast that which is good. We keep and use that which is helpful, and throw aside as useless anything that will not aid us in reaching the desired end. "The proof of the pudding is in the eating." So the value of any device is the aid that it will render in reaching the desired end. Thus the aim tests the value of the means. Standardized tests are rendering effective aid in testing out the value of certain school activities; they enable the teacher to retain the good and discard the dross.

Aim as a Guide.—Aim guides the process while in operation. What a blacksmith desires to make of a piece of iron decides what he will do with it. But aim does more than this; it gauges the heat, guides the arm, measures the blow, and tells when the work is completed. The destination of the traveler not only determines the course he will take, it guides his progress at every step. So aim in the recitation not only selects and tests the means, but it also guides them while in operation. It is the monitor that tells what to do at each step.

Aim and Effort.—Aim unifies effort. Every part of the work is organized with reference to the end, and contributes to it. Without aim one effort may counteract and annul another. Aim in building a house unifies the labor of a dozen workmen, each contributing his part toward the desired end. The glass in the hands of the old philosopher focused the sun's rays upon the enemy's boats as they lay in the harbor and set them on fire. So aim in the recitation concentrates and unifies effort.

Essential to Success.—Aim is essential to success. Aim attained is success, and success is the result of effort directed by a controlling purpose. The teacher succeeds when his ends are attained; he fails when they are not realized. The measure of success is the amount of progress made toward a desired end. If there is no aim, there can be no success, because there is no progress toward an end. Right purpose realized is the true measure of one's success. Success, then, without aim is impossible, because it is the prize that effort receives when it reaches the end, and if there is no end there can be no success.

Aim as Encouragement.—Aim encourages effort. Success is a great source of encouragement. It is one of the real mainsprings of human action. But you cannot succeed without aim, and, as you realize this aim, you note

the progress you are making. This inspires to greater effort and arouses to greater action. Thus aim stimulates effort. It makes success possible, it inspires both teacher and pupil, and stimulates them to greater action by crowning their efforts with the joy of achievement.

Aim as Important as Effort.—Aim is just as important as effort. But it must be united with effort. Either alone, like faith without works, is useless. United they are the twin angels of progress, the keynotes of success, the linchpins in the chariot of achievement. Aim and effort are complements. They must work hand in hand in every recitation. The one aims the gun, the other fires it; the one is the track that guides the wheels of progress, the other is the fuel that moves them; the one is the eye that directs the warrior's arrow, the other is the strong arm that sends it to its quarry. One is just as essential as the other, but they must work together. United they forge the shaft of human progress; separated, they shatter its prospects.

2. AIMS ENUMERATED

What, then, are the aims of the recitation so vital, so necessary, and so indispensable to success? To this question numerous answers have been given, and to enumerate some of those suggested by the great educational leaders of the nation will be a sufficient answer to it at this time.

The late Doctor White says the recitation is:

1. To test the pupil's knowledge.
2. To test the pupil's acquired mental power.
3. To test the pupil's skill in school-room arts.

In studying these aims it is to be noted that he uses the term recitation in its strict etymological sense. To him it is simply a testing or examining exercise. The work of actual instruction he assigns to another exercise which he calls the lesson.

Ogden enumerates four specific aims for the recitation :

1. To test preparation.
2. To aid in a more thorough understanding of the subject matter.
3. To cultivate memory.
4. To cultivate the power of expression.

These aims somewhat enlarge the literal boundaries of the term. They sweep over its etymological limitations and include in it the actual instruction necessary to do a thorough comprehension of the subject matter.

Putnam suggests that the recitation has two great aims :

1. Instruction and testing on the part of the teacher.
2. Learning and reciting on the part of the child.

He places instruction and learning first, and thus shatters the partition between the recitation and the lesson, including the latter as part of the former. He uses the term recitation in a general, not a literal sense.

Doctor Swett is more generous in designating the aims of the recitation. He divides them into two classes that may be termed major and minor aims. The main objects, he says, are :

1. To impart instruction.
2. To give mental training to the child.

The minor purposes, he adds, are :

1. To induce study.
2. To test preparation.
3. To cultivate expression.
4. To correct errors.
5. To awaken inquiry.
6. To form habits of attention, readiness, and self-possession.

This is both a classification and an enumeration of aims, and is based not upon the etymological, but rather upon the general meaning of the term.

Fitch sums up the objects of the recitation as follows:

1. To find out what the pupil knows, to prepare him for instruction.
2. To discover his misconceptions and difficulties.
3. To secure the activity of his mind, and his full co-operation.
4. To test the result and outcome of what you have taught.
5. To determine the pupil's readiness or ability to go on.
6. To test yourself as a teacher.

Sabin says a recitation should do four things for the pupil:

1. It should determine his knowledge as obtained from the book used in class.
2. It should be the means of making clear to him points which need explanation.
3. It should convey to him information not in the book.
4. It should afford him the medium of measuring himself with his fellows.

Doctor Harris sweeps the field with a master's eye. To him its content and its limitations are clearly defined. He, too, uses the term in its general sense, and within its boundaries he finds ample room for the following aims:

1. To draw out each pupil's view on the subject.
2. To test the crudeness or thoroughness of grasp of the subject.
3. To correct his ideas by the greater comprehensiveness of others in his class.
4. To arouse and stimulate a new method of study in the next lesson.
5. To cultivate the closest habits of attention.
6. To bring into full play the powers of numbers engaged upon the same thought.
7. To bring into play the teacher's highest powers.

8. To supplement by stronger force what the pupil gives.

9. To arouse self-activity, power of independent research, acute, critical insight, to be obtained only by contact with one's fellows striving for the same goal.

10. To initiate the student into the great secrets of combination with his fellows.

11. To help the struggling boy or girl to ascend above his idiosyncrasies and achieve the universal form.

12. To learn to suppress the merely subjective, and how to square his views with what is objective and universal.

The aims of the socialized recitation may be summarized as follows:

1. To develop class unity, class spirit, class responsibility and class coöperation.

2. To democratize the recitation in such a manner as will prepare the pupils for active and efficient participation in the affairs of the State.

These are the main objects of the recitation. They include almost every possible aim and are sufficiently clear and comprehensive for all ordinary class work. Within the boundary of these aims the teacher will find some specific end to be attained in each exercise.

TOPICAL OUTLINE

I.—AIMS OF THE RECITATION DISCUSSED.

1. Aim is vital.
2. Aim saves time.
3. Aim conserves energy.
4. Aim determines the means.
5. Aim tests the means.
6. Aim guides the process.
7. Aim unifies effort.
8. Aim is essential to success.
9. Aim encourages effort.
10. Aim is as important as effort.

II.—AIMS ENUMERATED.

1. By White.
 - (a) To test knowledge.
 - (b) To test power.
 - (c) To test skill.
2. By Ogden.
 - (a) To test preparation.
 - (b) To aid in comprehending the subject matter.
 - (c) To cultivate the memory.
 - (d) To cultivate the power of expression.
3. By Putnam.
 - (a) Instructing and testing on the part of the teacher.
 - (b) Learning and reciting on the part of the pupil.
4. By Swett.
 - (a) Major aims.
 1. To instruct the child.
 2. To train the child.
 - (b) Minor aims.
 1. To induce study.
 2. To test preparation.
 3. To cultivate expression.
 4. To correct errors.
 5. To awaken inquiry.
 6. To form habits of attention and self-possession.
5. By Fitch.
 - (a) To test knowledge and prepare the child for instruction.
 - (b) To discover errors and difficulties.
 - (c) To arouse mental activity and encourage coöperation.
 - (d) To test what was taught.
 - (e) To test the power of the teacher.
6. By Sabin.
 - (a) To test the pupil's knowledge.
 - (b) To make clear to him difficult points.
 - (c) To instruct him.
 - (d) To measure himself with others.

7. By Harris.

- (a) To test the pupil's view of the subject.
- (b) To test the pupil's grasp of the subject.
- (c) To correct his ideas by the greater comprehensive-ness of others
- (d) To stimulate and direct study.
- (e) To cultivate habits of attention.
- (f) To develop class coöperation in thought.
- (g) To supplement what the pupil knows.
- (h) To bring into full play the teacher's higher powers.
- (i) To arouse self-activity and the power of independent research.
- (j) To initiate the student into the great secrets of combination with his fellows.
- (k) To raise the pupil above individual idiosyncrasies.
- (l) To suppress what is merely subjective, and to see what is objective and universal.

III.—AIMS OF THE SOCIALIZED RECITATION :

- 1. To develop the spirit of class unity and social coöperation.
- 2. To democratize the recitation in order to prepare pupils for active and efficient participation in the affairs of the State.

CHAPTER IV

ESSENTIALS OF THE RECITATION

Interest is a strong motive power.—BURLEIGH.

IN the successful operation of any process, certain conditions, vital in the relation they sustain to its success, must be fulfilled. The process may be conscious or unconscious, self-directive or guided by external influences, but the law remains the same. The essentials must be present or the process will fail. Growth demands nutrition, combustion requires oxygen, and reproduction is impossible without life.

So it is with the recitation. There are certain vital and fundamental conditions under which it must proceed. With these conditions present, the recitation invites success; without them, it guarantees failure. Learning is the final test of teaching, and no teacher really teaches except when somebody learns. Without the essentials the work may proceed and seemingly succeed, but, if nobody acquires knowledge, power, or skill, or cultivates the democratic spirit of group coöperation, the time and energy devoted to the recitation are simply wasted.

What, then, are the essential conditions under which individual or class instruction may proceed with hope of success? Or, rather, what conditions are essential to the learning process?

The mind acquires a knowledge of the thing it investigates. The extent of the knowledge is determined by the character and the extent of the investigation. But the mind will not examine or investigate to any extent the thing that does not interest it. Hence *interest is the first essential of*

the learning process. The mind alert, because of a present interest, examines willingly and learns rapidly.

Interest can scarcely be regarded as an active attitude of the mind. It is rather a pleasing, enjoyable, gratifying condition arising in it, because of the contemplation of some agreeable fact. But, in the eager desire to know, manifested in the inborn curiosity of children, the mind assumes a more positive and active attitude in which it strives to grasp and know the thing that interests it. This active, out-reaching attitude of the mind is *attention*, the *second essential* condition of the learning process. Interest is the feeling of pleasure excited in the mind by the attractive features of the thing it contemplates. Attention is the effort of the mind to know more of the thing that interests it. The former, to some extent, is the basis of the latter, and the latter may be regarded as the outgrowth of the former. But they are two separate conditions, each important in its place, and both essential to individual or class instruction.

I. INTEREST

The interest the child has in a presentation is either natural or acquired. The former grows out of some inherent quality in the subject matter that makes it attractive, and its contemplation and consideration pleasurable to him. The latter is the interest acquired in it by reason of its surroundings. The source of natural interest is the thing itself, or what it suggests; the source of acquired interest is the thing in its relation to the known things around it. Beautiful things are attractive, regardless of their surroundings, but things less attractive need the charm of background and environment to arouse interest.

If the children have this natural interest in a lesson—that is, if they are aroused, attracted, and led to examine its subject matter because of the feelings of pleasure and

gratification they find in it—the problems of class management and class instruction are robbed of much of their difficulty; for it is an easy matter to teach all who are eager and anxious to learn. But the difficult problem—the one that demands the greatest skill and the solution of which is awarded the highest honor—is how to invest that which is dry and uninteresting with those qualities that will make it attractive and its contemplation pleasant to the child.

Truth is like a diamond. It has many sides. And there is always one side that flashes and reflects the qualities that are pleasurable to the child. All phases of it, however, are not of equal attractive power, and it is the business of the teacher to turn the attractive side of the subject toward him, and thereby give him an acquired interest in it. How may this be done?

A child may be led to acquire an interest in a subject—(1) by *seeing the old in the new*; (2) by *seeing the new in the old*; and (3) by *seeing the utility of the new*.

The Old in the New.—A pupil may be led to acquire an interest in a new subject by seeing something familiar in it. A child among strangers is greatly interested in seeing the face of his mother, or of some person well known. A traveler in a foreign land is greatly interested in meeting a friend from home. So familiar truths, found in the midst of a new subject, naturally interest the child.

The study of what is familiar to the child—the thing he knows all about—becomes very monotonous and consequently destructive to interest. So, also, he cares very little for that which is entirely new, and of which he knows nothing. But he is always interested in seeing the old in the new—the thing that is familiar in the midst of that which is novel.

All truth is related. This is a wise regulation. For it

is impossible to get a truth into the mind unless it has a store of similar knowledge, or related facts, with which to examine and interpret the new thing. To learn is to see the relation between the known and the unknown, and the moment these relations are seen, the unknown becomes the known. This is the natural law of teaching, and it should not be disregarded.

An important application of this law is the study of lessons through present interest. Some subjects naturally unattractive become most interesting by reason of existing conditions and transpiring events. For instance, the history and geography of Russia and Japan, and the civilization of each, acquired great interest during the war between these nations. Likewise the methods of electing a President under our Constitution becomes a most attractive study during the campaign and at the time of the inauguration. An earthquake in some part of the world, that has wrought great destruction of life and property, lends interest to the study of earthquakes generally. In short, passing events and existing conditions may be made the medium through which an absorbing interest may be acquired in the study of many topics in history, civics, geography, and physiology. And it is needless to add, that the most opportune time to study them is when they are thus invested with living interest.

In acquiring a knowledge of a new and unknown subject, then, the law of acquired interest and the law of mental acquisition demand that the approach be made from the stand-point of the known, from the relation which the old bears to the new; just as you acquire a knowledge of a strange city from some familiar spot, such as the station where you enter it, or the hotel where you are stopping.

The New in the Old.—A pupil may be led to acquire an interest in an old, threadbare subject by seeing something

new in it. Thackeray says, "Novelty has charms that our minds can hardly withstand." This is more than mere fiction, it is a great fact. For novelty is one of the greatest avenues to acquired interest.

The child is just as much interested in seeing the visitor who comes into the home as he is in seeing the familiar face among strangers. Thus a knowledge of a new subject like geometry lends acquired interest to mensuration, because the new throws light upon the old, and the mutual relations of each to the other are grasped.

Monotony destroys interest, but change inspires it. We scarcely hear the ticking of the clock, but we notice at once the striking of the hour, because striking is a change from the monotony of ticking. The contemplation of old and familiar truth is very tiresome and monotonous and destructive to interest, but the discovery of something new in it affords relief and inspires new interest, because it is a change. The mind cannot remain long in its examination of that which is old. It must have some change. It naturally seeks that which is new, and if the teacher cannot point it out, the interest flags, and some irrelevant idea that is new leads the mind away from the point at issue.

Skillful teaching points out the mutual relations of the old to the new and the new to the old, and thus invests that which is uninviting, and perhaps repellant, with acquired interest. Indeed, good teaching consists very largely in pointing out the relations of the old to the new and of the new to the old. And learning is the act of noticing and grasping these relations, of making the novel into the familiar, of interpreting the new with the body of related truth already in the mind, and of working over both old and new into a body of newly organized truth by the process that we call assimilation.

Utility.—In the higher grades of the elementary school and in the secondary school utility may be made the medium

through which the child may acquire an interest in a subject either old or new. When striving for a definite end we acquire an interest in anything that will aid us in reaching that end. Byron, on leaving college, cried out, like a slave released from bondage, "Then farewell, Horace, whom I hated so!" But the poet studied Latin and had a good knowledge of it, not because he naturally liked the study, but because it would aid in his struggle to realize the literary ideals his budding genius was forcing upon him. Many a boy may acquire an interest in mathematical studies, not because he naturally likes them, but because they are necessary to a course in engineering, the ultimate goal toward which he is moving. Likewise a girl may acquire an interest in the study of stenography, not because the study is inviting to her, but because it will make her self-supporting. So utility may be made an important factor in acquired interest. "Utility," says Flagg, "is the watchword of modern times." Knowledge is more than a mere possession; it is also the instrument of progress, and utility holds a place as permanent in mental as in material things.

2. ATTENTION

The second essential of a good recitation is attention. The mind cannot receive truth until it first reaches out to grasp it. It cannot be fed until the sensation of hunger asserts itself. It will not drink until thirst creates the desire; and this grasping, hungering, thirsting attitude of the mind, in which it is eager and anxious to receive, and through which it reaches out to get what the teacher offers, we call attention.

Attention is absolutely indispensable. McLellan says, "No amount of presentation, however skillful; no amount of repetition, however persistent; no amount of explanation, however clear, is of any avail, unless the child's atten-

tion, the one condition of learning that cannot be dispensed with, is secured." A blind man cannot perceive colors; and it is just as impossible to make a subject clear and luminous to a child when inattention has closed his mental eye.

Attention simply means that the child's mind is noticing and discovering relations—learning—that it is grappling with some phase of the subject matter, that its mental machinery has been started by the material of the lesson and is in actual operation. On the other hand, inattention means that the line of communication between the mind and the subject matter has been broken, and that as long as the breach continues the teacher might as well be in Europe and the child in Africa as in the class-room so far as the progress of the pupil is concerned.

The loss of attention indicates that some interest more enticing than that which springs from the lesson, some association more solicitous than that which arises out of the subject matter, some relation more inviting than the one the teacher is presenting, has led the learner's mind away from the point at issue. It may also mean that the brain-cells have been consumed to the last fibre, and that the child's reservoirs of mental energy are exhausted. In any case it is nature's notice to the teacher either to make the recitation more interesting or to bring it to a close.

The degree of attention a teacher may expect in a recitation, according to Sully, is determined by two conditions:

1. The quantity of nervous energy disposable at the time.
2. The strength of the stimulus which excites the attention.

If a child is strong and vigorous, with a superabundance of nervous energy, a fair degree of attention may be aroused even by a feeble stimulus. But, if from any cause his vitality is drained, a stronger stimulus will be required.

The ability of a teacher is to some extent determined by his power to interest children in the lesson and thus catch and hold their attention. Shakespeare says:

“The crow doth sing as sweetly as the lark
When neither is attended.”

So the poorest teacher is as good as the best if neither has the attention of the learner.

Classes of Teachers.—With reference to the power to secure control and the attention of the pupils, teachers may be divided into two classes: (a) Those who naturally possess the power; and (b) those who must acquire it.

(a) *Those who naturally possess the power.* This implies a personality which is both attractive and commanding, for it draws by its presence and sways by its power. Leadership always has followers just as the magnet has adhesive particles. And the very presence of a great personality, with an eye that controls, with a voice that charms, with a manner that wins, and with infinite stores of reserve power that may be called into action at any time, and with a complete grasp of the subject easily secures and holds the attention of a class. In “Paradise Lost” Milton gives us a fine picture of this commanding and controlling power of a great personality, when he introduces Beelzebub to make his speech to the great council in Pandemonium. He says:

“With grave
Aspect he rose, and in his rising seemed
A pillar of state; deep on his front engraven
Deliberation sat, and public care;
And princely counsel in his face yet shone,
Majestic though in ruin: sage he stood,
With Atlantean shoulders, fit to bear
The weight of mightiest monarchies; *his look*
Drew audience and attention still as night
Or summer’s noontide air, while thus he spake.”

It is an easy matter for such a leader with such a personality to gain audience and attention. So many a teacher, by his eye, his voice, his manner, his attitude, his presence, and by all those qualities that enter into the commanding personality of a leader, attracts and holds the attention almost without effort.

(b) *Those who must acquire the power to gain and hold the attention.* This is by far the most numerous class of teachers, and the practical question with them is how to secure this power. Let us look at the negative side of the question first.

How not to Secure Attention.—Attention is the *voluntary* application of the mind to the subject matter of a lesson with a desire to understand it. As Baldwin suggests, it cannot therefore be secured—

By military requirement.

By arbitrary command.

By earnest requests for it.

By punishment for withholding it.

By external rewards.

The springs of interest are within. They are beyond the reach of arbitrary authority. Such methods are employed by mechanical and experimental teachers who lack the insight to locate these springs or the skill to lead the pupils to them. Giving mind to the subject, like giving money to charity, is valuable to the giver only when it is voluntary. Hence such mechanical efforts fail to secure that for which they strive.

How to Secure Attention.—The methods of securing attention are numerous, but instruction in this difficult art may be reduced to a few important suggestions.

(a) *Secure attention by skillful presentation of the subject matter.* Rembrandt's portraits are characterized by a flood of light thrown upon the features at the spot where the artist aims to focus the gaze. Outside this, everything

shades off into obscurity and shadow. Skillful presentation vivifies the uninteresting lesson with interest. It throws a flood of light upon the point at issue, and shades off into obscurity everything irrelevant. It encourages inquiry by directing it, strengthens curiosity by feeding it, and stimulates investigation by rewarding it. It is clear, strong, logical, and to the point, and thus helps to keep sleepy minds awake, slow minds moving, and wandering minds fixed.

1. *Skillful presentation works through interest.* Interest is the basis of attention. It is that magnetic quality of truth that draws the mind to it. The contemplation of any fact that is interesting gives pleasure to the mind and impels it to further investigation. Interest, then, is the key to attention. It opens the door of the mind through which truth may enter. The mind that is really interested reaches out after the thing that interests it. It craves the truth that attracts it, because of the pleasure its contemplation affords and the gratification it gives. Skillful presentation knows this, and therefore studies the secret sources of interest.

Skillful presentation appeals to the natural curiosity of the child. A desire for new truth precedes instruction; and if this desire is properly aroused, and properly satisfied, it opens the flood-gates of interest and becomes one of the chief sources of attention.

Skillful teaching makes a wise use of stories, anecdotes, incidents, because they help to train the attention by interesting the children. But they must necessarily grow out of and illustrate the subject matter, and thus be an essential part of the lesson.

Then, too, the skillful teacher interests the pupils and trains their attention by being interested himself. Life only can give life, enthusiasm enkindles enthusiasm. Fire

warms all who approach it, and zeal communicates itself from soul to soul. Interest is contagious, and soon spreads from teacher to class. The teacher that is all aflame with this magnetic fire will have little trouble in communicating it. Teaching is serious business, and those who succeed must be in earnest. It is this serious earnestness Shakespeare has in mind when he says :

“ They say the tongues of dying men
Enforce attention like deep harmony.”

Baxter suggests the same thought in the following lines :

“ I preached as never sure to preach again,
And as a dying man to dying men.”.

The teacher who is dying professionally and intellectually, as Trumbull suggests, has no rightful place in the ranks of the skillful, and ought to have no place in the school. But the living, growing teacher, with a warm heart, with generous sympathy, with burning zeal, with an inspiring manner, and with serious earnestness, is always desirable. Such earnestness is a great magnet. Its open presence draws; its secret power attracts the most listless. “Interest is the mother of attention,” and she never fails to train her child. And an earnest teacher, overflowing with a subject in which he has steeped his very soul, and eager in an intense desire to present it to a class, will, under ordinary circumstances, interest the pupils and through it train their attention.

2. *Skillful presentation appeals to the eye as well as to the ear.* Attention is the door through which the truth enters the mind. The latch is on the inside, and the eye and the ear are the main latchstrings which the teacher must employ in opening it. Skillful teaching uses both. It knows that ordinary instruction is addressed to the ear, and

therefore seizes every opportunity to use maps, charts, objects, and illustrations that appeal to the eye.

3. *Skillful presentation makes a wise use of illustrations.* Instruction must be clear and pointed. Abstract statements and general truths are not easily understood. To make instruction in any field clear to the child, and to give him a comprehensive grasp of the truth, the skillful teacher will necessarily make frequent use of figures, comparisons, and illustrations. But the figures through which the child is shown the desired truth must be transparent, and the illustrations must be luminous. Unless they throw some light into the haze and gloom where the truth under consideration lies concealed from the child, they are worthless. But where illustrations *illustrate*, they encourage the act and strengthen the habit of attention by showing the mind what it seeks.

4. *Skillful presentation works through the laws of acquired interest.* As this is discussed under the head of interest, it is necessary only to mention it here.

(b) *Secure attention by skillful class management.* A good general brings back deserters and makes it difficult for those who would leave to get away. So skillful class management brings back the mental deserters, and makes it difficult for all who would desert to get away.

Skillful class management favors attention by grouping a class into a small area. It brings the entire class under the immediate range of the inspiring and controlling power of the teacher's eye. All tendencies to inattention are easily noted, and remedies promptly applied. The class and teacher, thus in close proximity create an atmosphere of sympathy and interest which, breathed by the listless aids in promoting his attention. A wide separation of the class in different parts of the room encourages inattention, but a close grouping of the pupils aids in preventing it.

1. *Skillful class management encourages attention by*

appealing to all the pupils as well as to each. If questions are asked they should be addressed to the class to arouse, stir, and stimulate each member; then one is called upon to answer. Each child is thus made responsible for the entire lesson. Each must be ready, because he may be asked to answer at any time. Skillful management avoids routine questions in succession around the class and questions directed to the individual, either singly or when a pupil stands to answer a dozen at a time, because they are not conducive to class interest and class attention.

2. *Skillful class management favors attention by a wise use of question and suggestion.* The question is the right arm of the teacher's power. It challenges wavering attention, draws it and the deserter back to the point under consideration, directs the mind to the spot where it will be rewarded by what it discovers, and thus gives it renewed power to attend in that direction again. Suggestion is the flashlight thrown across the pathway of investigation just at the point where the child is trying to discover the thing sought.

3. *Skillful management invites attention by change and variety.* It avoids monotony and routine. It varies the method from question to topic, from oral to written, from individual to class, and keeps the mind constantly on the alert by flashing fresh truth upon it from unexpected sources, and by surprising it with that which is new and novel and therefore full of interest.

The skillful teacher and the skillful manager always expect attention, and they generally get it. They compel it, not by arbitrary authority, but by a wise use of the natural means that secure it, and the wise regulations that promote it.

Sustained Attention.—Skillful presentation and skillful management are the main channels through which the influences operate that secure the attention of pupils. And

they are just as helpful in holding it, because they give the mind what its nature demands—food and exercise.

(a) *Enchain attention by giving the mind food.* The mind is a living, growing organism. As such it demands nourishment, and knowledge is its staff of life. Facts and their relations are the necessary food upon which it feeds. The teacher who would enchain attention must reward the mind with the natural nutriment its expanding life requires. The mind that gives attention must have its reward in that which feeds it. The teacher who warms the mental action of his pupils with hot thought fresh from a glowing mind will be far more successful than the one who deals out glittering generalities.

(b) *Enchain attention by giving the mind suitable exercise.* Mind and body are mysteriously linked together. Exercise is as much the law of mental as it is of physical development. The normal mind cannot pause even for a moment without wandering. It must move. Hence exercise is as essential to its natural growth as food. The alert mind, that is constantly discovering, comparing, and concluding, has no time to spare in wandering away. And the teacher who presents the related points in a subject clearly, forcibly, and briskly to his pupils will in all probability be rewarded by their close attention, because he rewards them with the mental food and that progression of thought which the normal mind demands.

TOPICAL OUTLINE

ESSENTIALS OF THE RECITATION

I.—INTEREST.

1. Natural.
2. Acquired—Interest is acquired in a subject.
 - (a) By seeing the old in the midst of the new.
 - (b) By seeing the new in the midst of the old.
 - (c) By seeing the utility of the new.

II. ATTENTION.

1. Classes of teachers with reference to the power to secure it.
 - (a) Those who naturally possess the qualities that secure it.
 - (b) Those who must acquire them.
2. How not to secure attention.
 - (a) Not by military requirement.
 - (b) Not by arbitrary command.
 - (c) Not by earnest requests for it.
 - (d) Not by punishment for withholding it.
 - (e) Not by external rewards.
3. How to secure attention.
 - (a) By skillful presentation of the subject matter.
 1. Skillful presentation works through interest.
 2. Skillful presentation appeals to the eye as well as to the ear.
 3. Skillful presentation uses illustrations.
 4. Skillful presentation works through the laws of acquired interest.
 - (b) By skillful class management.
 1. Skillful management groups the class into small area.
 2. Skillful management appeals to all as well as to each pupil.
 3. Skillful management makes wise use of question and suggestion.
 4. Skillful management makes wise use of variety and change.
4. How to hold the attention when once secured.
 - (a) Enchain it by giving it mental food.
 - (b) Enchain it by giving it appropriate exercise.

CHAPTER V

PREPARATION FOR RECITATION; OR, THE ART STUDY ¹

The three foundations of learning are seeing much, suffering much, and studying much.—CATHERALL.

“THINKING educates; nothing else does.” Teachers, schools, recitations, and books are valuable only as they stimulate and direct mental effort. The child may acquire some elemental knowledge through observation and attention almost without effort, but it is thinking that really educates him.

Power is always acquired. It cannot be inherited or purchased, but is always the result of mental effort.

To study is to think. It, therefore, educates. Through it the child may acquire both knowledge and power; and the extent of his study is an important factor in determining the extent of his acquisition. The child who makes a vigorous and extended effort in study may not acquire as much as his talented companion, who comes to his task with inherited tendencies toward culture, and with a superior quality of brain fibre; but an extended and vigorous effort will always give any student larger returns than a short, feeble one. Study may always be regarded as one of the chief causes, and one of the safest measures of a student's ability.

The enlarged curriculum of the elementary school, and

¹ The main purpose of this chapter is not so much to guide advanced students in the art of study as to aid young teachers in directing their pupils how to prepare a lesson.

the short period of time in which the work must be done make the problem of study both important and difficult. The age demands of the child the mastery of a few subjects and a knowledge of many. Neither alone is sufficient. As a student his work must be both extensive and intensive. It is so easy to give the child a superficial knowledge of many things, and so difficult to make him master of a few, that superficiality rather than intensity is likely to be the chief characteristic of his habits of study. This end must be carefully avoided; for vigorous effort and intense study are the qualities that give the highest degree of power.

1. THE POSSIBILITY OF STUDY

Before proceeding to discuss this subject, it seems wise to state a few fundamental facts that make study possible.

The Unity of Truth.—All truth is a unit. Every fact is related, either intimately or remotely, to every other fact. The universe is a bundle of relations. It is also a unity of unities. Groups of facts closely related, and bound together by laws and principles, constitute a science. Each science has its own unity, and yet it is only a part of that greater unity that runs through the realm of truth, binding all into one complete whole. Through the powers of analysis and synthesis human investigation has subdivided this great unity and constructed minor ones of intimately related knowledge. The number of sciences is multiplying, and the possibilities in this line are boundless. The universe of truth stands as a challenge to human investigation. It is the infinite, unsolved problem of the ages. Each new discovery suggests the possibilities of others, and of minor unities whose principles are yet unknown and whose laws are yet to be formulated. But every advance in human knowledge, and every step in human progress, only testify anew to the infinity and the unity of the world of truth.

The Mind's Ability to Know.—The mind may know these relations. The mind was made for truth. It seeks knowledge and its relations as the eye seeks the light. It has the inherent power to discover and understand them. To know is to discover, to interpret these relations and combine them into new unities. The unity of truth and the mind's capacity to know are complementary. Each exists for the other. The one offers what the other seeks. It is evident that the finite mind can never fully comprehend the infinity of truth; but it is equally evident that it can discover and know some of its relations. Indeed the greatest enjoyment and the chief employment of man are found in the exercise of this inherent power of the mind to seek, to discover, and to understand.

Knowing Without Conscious Effort.—Some of these relations may be seen and known without a conscious effort. Some knowledge lies in the surface of truth. It reveals itself to the mind without a conscious effort. Early in life the child acquires a stock of these relations. Observation gathers unconsciously many simple facts, experience furnishes many more, and intuition supplies a vast amount of elementary knowledge. We work with the power we have, and the mental store thus accumulated is the student's capital stock with which he begins business, and which he uses in the quest for those deeper truths that can be found and comprehended only by a long and vigorous self-directed effort.

The Possibility of Study.—The unity of truth, the capacity of the mind to know, and the accumulated store of primary relations thus acquired, are very important. They make study the self-directed effort of the mind to know, possible.

2. CONDITIONS FOR EFFECTIVE STUDY

The conditions under which a child may do effective work in the preparation of a lesson may be considered under two heads: 1. The physical or objective conditions. 2. The mental or subjective conditions.

The Physical or Objective Conditions.—The physical conditions necessary to effective study are as follows:

- (a) Good bodily health and comfort.
- (b) An abundance of pure air at the normal temperature.
- (c) Freedom from noise and confusion.
- (d) Regular habits and hours for sleep, exercise, and study.

The reasons for these essential conditions are so evident that no discussion of them seems necessary.

Mental or Subjective Conditions.—The subjective conditions are just as important as the objective, and they are by far the most difficult to supply and regulate.

(a) *Interest in the subject.* The first essential subjective condition is interest. All study with young children must spring primarily from the interest they have in the lessons. To study is to examine, to inquire, to investigate; to see, to understand and to classify. But no youthful, untrained student will attend to or investigate a subject that does not incite his interest. Interest is the magnet that draws the mind into the investigation. It is that inherent quality that truth possesses, the contemplation of which is agreeable and pleasant to the mind. And continuous interest in a lesson is the basis of a continuous application of the mind to it.

Interest, as pointed out, is either natural or acquired. Natural interest, as we have seen, is due to that quality of truth which invites the child to examine it, and to the contemplation of that which it believes will reward it with

feelings of satisfaction and pleasure. Acquired interest is the interest that the child feels for the moment in a subject naturally dry and uninteresting. It is due to the sudden discovery of some hitherto unseen quality or relation which is sufficient to lead the child to acquire an interest in what was before unattractive and repellent. Both of these interests are important, and together they constitute the first fundamental condition of effective study, because they invite the mind to investigate and reward it by giving it that which pleases and gratifies.

(b) *Ability to study.* Another subjective condition essential to effective work in the preparation of a lesson is the ability to study. This is both a content and a power. An empty mind cannot acquire. As a content it needs a store of related truth with which to acquire and interpret the new thing. As a power, it must be able to concentrate itself upon the thing under consideration to the exclusion of all else. This is the accumulated strength resulting from similar efforts made in the past. The content is the capital stock with which the mind works in the process of study, the power is the ability to apply this stock effectively in the process of knowing. Both are important and unite to form what may be termed the child's ability to study.

The objective conditions of study are passive, the subjective conditions are active. Both, however, are essential. The one makes the external atmosphere favorable under which the other may act.

3. OBJECTS OF STUDY

There are three great objects of study which in a manner, include all minor ones, and are in themselves sufficient for a complete discussion of the subject.

A Well-formed Mind.—The chief purpose of study is to develop a well-formed mind. This means the capacity to act with skill, accuracy, and power in any given direction

for a given time. It is the strength that comes from systematic effort. It means power to see, power to grasp, power to know, power to act, power to concentrate, power to apply, and power to execute. The well-formed mind sees clearly, thinks profoundly, reasons accurately, analyzes logically. It compares, classifies, and concludes with ease and facility. It makes observation accurate, memory exact, logic convincing, and appeal forceful.

Discipline is better than knowledge. What a mind can contain is always important, but what it can do is far more vital. Discipline is the result of mental action. This action has two distinct phases: acquisition from without, and expression from within. Each gives its corresponding result in increased power, skill, and tendency to act again. Study is the self-directed effort of the mind to acquire and to express. It stirs both these phases of mental action, and thus becomes a valuable means of mental discipline. Knowledge that comes as the result of effort is valuable. But the well-formed mind with its discipline, its skill, and its power, is more valuable, and must be regarded as a most important object of study.

It is to be noted that the discipline that comes from the study of any branch is of two kinds—special and general. The former is the power to pursue that study or others closely allied to it. The study of algebra, for instance, gives a special power to pursue that study and to grasp closely related mathematical studies. The latter, or general discipline, that comes from the study of any branch, is the general power of the mind that may be applied effectively in any direction.

Modern psychology seems to indicate that this special discipline, resulting from any mental effort, is far in excess of the general. Evidence of this may be found on every hand. An individual rarely excels by reason of superior discipline in more than one or two special fields. Superior

attainment in one line is no guarantee of ability in others unless they are closely allied. If the general discipline were equal to the special, we should find every strong mind in one field equally strong in its power to master others.

The discipline, then, of the well-formed mind is composed not so much of the general ability that comes from the study of a few branches, as the special power that comes from the study of many. "No study, or no single group of studies," says the late Dr. Hinsdale, "contains the possibilities of a whole education." It is true that the mastery of a few branches is better than a smattering of many; but it is equally true that the mastery of many is better than the mastery of a few. The time was when the regular classical course of the college was regarded as sufficient for all the demands of life. But that day is past. The modern university, in striving to build the well-formed mind, offers instead a large variety of special courses; and the trend in public schools is towards an enlarged and enriched curriculum. Household economies and the manual arts, and indeed every branch that demands recognition in the well-formed mind is an aim in all school work, and each is willing to rest its case on what it can contribute to that end.

An important phase of this discipline is the power of self-help. Study is learning through a self-directed effort. This effort may be somewhat imposed at first, but it leads to self-imposed effort, and finally to self-help. Through this effort at self-help the student develops the sturdy virtues of self-reliance, self-respect, and the power of independent thought and action, and steps out into life a "self-poised, self-contained, self-impelled, and self-controlled man."

Study through self-help develops in the individual the power of initiative. This is the power to introduce, to start, to suggest, or to propose. It is the ability to see and

to do in a good way what ought to be done without suggestion or direction from others.

This power of initiative includes four factors: insight, suggestion, plan, and execution. It sees conditions, recognizes the needs, and plans and applies the remedy. These elements are of vital importance in the make-up of a man. In medicine they produce the skillful physician; in law, the forceful attorney; in governmental affairs, the great statesman; in war, the great general; in commerce, the great business man; and in the field of industry the great inventor.

The process of study analyzed, reveals almost the identical elements found in initiative. Insight is the power of acute observation, of deep penetration, of accurate discernment, of quick perception, and of correct induction in the mind's effort to know. Study, through the grasp of existing conditions, sees what to do, and how to plan and execute. Indeed, it is simply the effort of the mind to exercise its power of initiative in the act of knowing. And since "we learn to do by doing," study trains this power of initiative by exercising it.

Study as self-directed acquisitive effort not only develops this power of initiative, but it also leads to self-discipline and self-culture. The school's world of truth is a small one. It reveals only the beginnings of knowledge and simply prepares the mind for what it may do. Life is a larger school. The facts of nature, the laws of science, the rules of ethics, and the principles of human action touch and teach in the most practical way all who will learn. But from the realm of recorded thought, as imbedded in books, a realm as vast, as broad, as deep, and as rich as it is inviting, little can be acquired after leaving school except through the power of study. Persistent application is the great instrument of self-culture. Through it the

individual may grasp the keys that will open to him the very treasure-house of truth. It develops self-reliance and self-control, trains the power of initiative, and opens and controls the gateway to self-culture.

Study helped Grote, as he counted pennies in a broker's office, to gather and recount the facts that made a great history. It made Michael Faraday, as he worked as a book-binder, one of the greatest explorers and discoverers in the realm of science that the world has ever known. It enabled Henry Wilson, as he stretched uppers in a shoe-shop, to fit himself for the vice-presidency of the United States. It prepared Abraham Lincoln, as he split rails and read law, to see the iniquity of slavery and finally to receive the gratitude of an emancipated race and the plaudits of humanity. It trained Hugh Miller, as he trimmed stone in the quarry, to read and write in terms of geology the great story of the rocks. It raised John Bright from the factory floor of a cotton-mill to the front rank of British statesmen. It made Elihu Burritt, as he hammered horse-shoes in an old shop in Connecticut, the greatest linguist of his day, perhaps the greatest of all time. And what study has done in the matter of self-help and culture, study can do again. It will enable the clerk in the store, the business man in the office, the farmer in the field, and the mechanic at the bench, to master some field of truth, to feed the virtues of self-reliance and self-control, to develop the power of initiative, and to slake self's thirst at the living fountains of culture. And all this discipline and power of self-help are included in what we have designated as the first great object of study—a well-formed mind.

A Well-filled Mind.—The second object of study is a well-filled mind. Education is not merely a matter of discipline; it is also a process of nutrition. The mind is an organism that grows. It must, therefore, be fed, and knowledge is its natural and necessary nourishment.

Knowledge is as much, though not as important, an object of study as discipline. Knowledge is not power, but rather the necessary material with which the mind exercises itself in the development of power. Neither discipline alone, nor knowledge alone, but rather discipline through knowledge is the immediate aim of study. They are complementary factors, each rendering its best service through the aid of the other. An engine is of little value without fuel; so the strong mind, to be efficient in its service, needs the fuel of facts. The direct effort of study is knowledge, but the result of that effort is both knowledge and discipline. And while the latter is to be regarded as superior to the former, yet each is nevertheless an important object of study.

A Well-rounded Character.—Knowledge and discipline are both of vital importance, but the great aim of study is character. Emerson says, "Character is more than intellect. A great soul will be strong to live as well as strong to act." Manhood is better than intelligence, virtue is above culture, goodness is superior to greatness, and the soul outranks the intellect as the gold outranks the dross.

Knowledge, discipline, character, are the three educational graces. They constitute the triple crown of manhood, and the trinal unity of an ideal life. The true aim of study, like the true aim of education, then, is not the enthronement of any one of them, but of all, in the individual.

4. THE PHILOSOPHY OF STUDY

The Act of Study Defined.—To learn is to acquire knowledge and through it power and skill. The act of learning may be occasioned either with or without the aid of a teacher. To study is to acquire knowledge and its resultant power without the help of a teacher. The act of studying differs but little from the act of learning. The act of teaching involves the efforts of two persons—the

teacher and the taught. The teacher points out the relations and leads the child to see and comprehend them. The act of study involves the effort of but one person. Unaided the student explores the field of truth, tries to discover its facts and their relations, strives to understand them and to formulate their laws and principles. If to study is to learn without the aid of a teacher, it is evident that the philosophic act of study is closely allied to that of learning.

The Process of Study Explained.—There are three well-defined stages in the process of learning, corresponding to the laws of mind and the laws of teaching, and each may be regarded as a distinct stage in the process of study.

(a) *The stage of apprehension.* This is the stage in which the mind of the student surveys the field and grasps in its entirety the thing to be known. In the teaching process it answers to the act of unit-presentation. The mind inspects the thing to be known as a whole, a complete thing, an individual unit, and tries to know it as such. One apprehends when he knows a thing as an individual unit. He comprehends it only at a later stage, when he knows it in its parts and in their relations, and in the relations it sustains to other things. To apprehend is to perceive. The mental product, then, of this stage of the process is the percept. This percept is the result of a mental view of the things to be known as a whole. The mind first deals with aggregates, just as the eye sees the whole of an object before it looks for parts and their relations. This stage of perception or apprehension is the stage in which the mind asks for and receives its food in a unified form. It apprehends or knows something of the thing to be known; but it has not yet reached the stage of comprehension that gives a more intimate and complete knowledge of it.

(b) *The stage of comprehension.* The second stage in the process of study is the stage of comprehension. To comprehend is to conceive. The mental product, then, of

this stage is the concept. In it the mind takes the percepts already apprehended, and proceeds by way of analysis to separate them into their elements and to note their relations. Its knowledge is far more intimate, comprehensive, and complete, because it sees not only facts as units, as in the stage of apprehension, but it also knows them in their parts and relations. Each part stands out from all others as a distinct thing, and yet it is related in some way to the others. The vague, indefinite notion obtained by apprehending a thing in its unity is replaced by a knowledge that is clear, definite, accurate, and detailed, gained by an examination of a small part rather than the unit. The new knowledge thus acquired is united to the mind's previous possessions by the process of assimilation. Thus the mind works up its percepts into concepts by a twofold process. It analyzes to see and understand relations, and then by synthesis proceeds to unitize them.

Comprehension is pre-eminently an appreciative process. It includes interpretation, discrimination, generalization, and assimilation. To apperceive is to think into unity the mind's experiences, new and old. It constructs into organic wholes the mind's data, past and present. In the stage of comprehension the mind not only acquires larger, better, richer stores of related truth, but it reorganizes the old and the new into related wholes.

5. HOW NOT TO STUDY

The Negative Side.—Do not attempt to study by idly reading over the subject matter while the mind is dwelling upon something else. All such efforts will fail. Study is an act of the mind, not of the lips. And yet children often fall into this habit when they try to force the mind to study a lesson that is devoid of interest to them. The eye that tries to examine two objects at once sees neither; so the mind cannot give attention to two things at a time. Atten-

tion, the essential condition of study, is partial and all-exclusive. It shuts out everything else in the whole realm of truth, while the mind is investigating the point at issue. And yet the mind may, in a mechanical way, see and say the words of the lesson, and perhaps get a hazy glimpse of an idea occasionally, while it is partially considering some other subject. But such efforts should not be tolerated; for study is the earnest, *undivided* application of the mind to the lesson.

Studying Versus Memorizing.—Do not attempt to study by memorizing the text. Knowledge is a matter of ideas, not words. The evidence of effective study is a comprehension of the text, not the ability to repeat it. Studying and memorizing are processes essentially different. The one deals with thought, the other with words; the one with content, the other with form; the one uses the mind the other the memory. Truth dwells not in words except when tented on the printed page, or when it soars from soul to soul on the wings of expression. It enters the human mind as ideas rather than as words. The latter are only the empty husks, the transparent cabinets in which one mind ships its ideas to another. And the cabinet must be so transparent to the child that he can see the idea that it conveys. Some truth may occasionally be swallowed whole, casquet and gem, but in study it is best, as Bacon suggests, to chew and digest it.

Studying, then, is not memorizing the text. And yet this is what most children attempt to do when a textbook in geography, history, grammar, or physiology is first placed in their hands. So prevalent is this false notion of study that probably eighty per cent. of the children in the elementary school use it and it alone. As a result their stock in trade is words. But the food of the mind is truth, not its empty husks.

6. HOW TO STUDY

Emerson says, "Each mind has its own method." This is true, and yet in a general way all minds are similar and follow to some extent the same general plan; for unity in diversity is just as prominent as diversity in unity in the great realm of nature. And while each mind may have some individual characteristics, yet some general suggestions applicable to all may be offered.

Purpose in Study.—Have a definite purpose in the study of each lesson. Aim in study is as important as aim in the recitation. The pupil must know exactly what he is to do. A general purpose in the preparation of a lesson is not sufficient; the purpose must be specific and exact. The pupil should know what to look for in his study, what to do, and how to proceed. If he is to be trained in the art of study, the assignment of the lesson must point out exactly its extent, the facts to be stressed, the ends to be attained, and the method of procedure.

The Leading Thought.—Read the lesson over carefully and thoughtfully as a whole. Try to discover its leading thought. It is a link in the chain of instruction. It is not only a link, but an essential part of the chain. It has, therefore, a unity of its own, and at the same time it is a part of the greater unity that binds together a series of lessons on any subject. Try to find this unity of the subject. See what this link is, what it adds to the chain, and how it is joined to what precedes it.

This examination of the lesson as a unit corresponds somewhat to the stage of apprehension in the learning process. The mind first demands wholes or aggregates before it proceeds to analyze them, and in this examination it looks for them.

The Purpose to Understand.—Concentrate the mind upon the lesson with a purpose of understanding it. Focus the supply of related facts already learned upon the new

thing with a determination to interpret it. Bring the analytic power of the mind to bear upon the lesson in an attempt to separate it into parts. This effort tends to make vague knowledge definite. It reveals parts and their relations of similarity and difference, and thus gives the mind more intimate and accurate knowledge, because it has descended from its examination of units to their analytic parts and relations.

Scrutinize principles, statements, definitions, and essential parts of the text critically until they are understood. Examine dictionaries, maps, charts, and other texts that will aid in getting a clear comprehension of the facts. Turn on every side-light possible and strive to see the lesson clearly, accurately, and definitely in its parts and their relations.

This effort at study corresponds in a measure to the stage of comprehension in the learning process. It gives the mind an enlarged stock of intimate and exact knowledge, clearly comprehended and carefully classified, in suitable form for easy retention and ready reproduction.

The Full Meaning of Facts.—Seek to know what the fact is, what the fact means, and what the fact teaches. Each of these three view-points is important. The first appeals to the memory, the second challenges the understanding, and the third reflects itself in character. The first and second operate through apprehension and comprehension and tend to produce the man of culture and erudition. The second and third act through comprehension and application and tend to produce not only the man of profound learning, but also of wisdom, character, and utility. And not one of these qualities alone, but rather the union of all in the individual, is the true aim of education.

The student who would utilize his time and energy to best advantage in study, and at the same time make it contribute to the true end in life, should strive to know the

facts of a lesson, to understand them, and to abstract from them the great underlying truths that build into character. To know and to understand are valuable acquisitions; but to draw from any lesson its practical and moral principles, and to incorporate them into a life of character and usefulness, should be the highest aim of every student.

Jacotot's Plan.—The suggestions of Jacotot, as presented by Mr. Payne, are worthy of careful consideration. They are summed up in the four words: *learn, verify, repeat, and reflect*. It may be wise to glance at each separately.

(a) *Learn*. The first step is to learn the facts of a lesson. The student must grasp them firmly and know them accurately. This does not throw much light on the process of learning, but it emphasizes its importance. The student must know something of the facts, and even if the knowledge is at first general, indefinite, and vague, it will at least serve as a basis for reflection.

Learning the facts in some of the earlier systems of education was scarcely equivalent to knowing them in our phraseology. Learning was then a matter of memorizing rather than knowing. It appealed to the memory rather than to the understanding. But to know the subject matter of a lesson clearly or vaguely, intimately or remotely, is of first importance to every student. To learn in Jacotot's method was the first step, and answers in a general way to the stage of apprehension.

(b) *Reflect*. The second step is to reflect upon the facts apprehended. Emerson says, "The hardest task in the world is to think." It consumes the vitality and exhausts the energy of both brain and body. And this is the task that the student faces at this point. But it has its rewards, subjective and objective; and its highest reward is mental power. This is what Vincent means when he says, "Knowledge is best that comes by hard effort, and it is best because of that effort, and not because of the knowl-

edge." This step corresponds, in part at least, to the stage of comprehension in the learning process in which the mind works its percepts into concepts.

(c) *Verify*. Statement may not be fact. Evidence may not be authentic. Testimony may not be correct. It is wise, therefore, to verify statements, to confirm evidence, to substantiate testimony. As the sun dispels the mist, so error vanishes in the presence of verification. And verification to-day on the part of the student is just as important as ever. The eager student will verify truth by referring it to other tests, by consulting higher authorities, by going to original sources, and by the merciless judgment of facts and figures, and the cold logic of analysis and thought. Such substantiation is desirable for many reasons :

1. It establishes the truth.
2. It gives the mind a clearer and broader conception of it.
3. It fixes it more firmly.
4. It makes the mind strong and cautious in investigation.
5. It gives the self-reliance that springs from positive knowledge.
6. It makes truth and reason the standards of judgment.

(d) *Repeat*. The purpose of this in the method under discussion is to fix firmly in the mind its acquisitions. The early schemes of education unduly emphasize the importance of memory-training to the neglect of the understanding. There is danger to-day of swinging too far to the other extreme. The memory and the understanding are both important. The gun is useless without the ammunition. The engine is helpless without the fuel. The army is hopeless without its provisions. So without memory the strongest mind is useless. Fact is fuel in the engine of thought. And the strong mind must have linked to it a

store-house of fact that will supply it at any moment with the exact material needed.

Modern investigation has added much to our knowledge, and modern methods to our efficiency. But they have not rebuked the wisdom of these old-time suggestions. Every thoughtful student learns the facts. If there are doubts, he verifies those facts, and then reflects upon them. He verifies his conclusions with the highest standards at his command, and then strives to fix firmly in his mind both the facts and the conclusions.

7. THE UNPREPARED IN THE RECITATION

In every well-regulated school there will occasionally be found a few pupils who will either neglect or refuse to make suitable preparation or for some reason come to the class unprepared. In schools that lack systematic organization, wise management, and skillful instruction, the number often exceeds a few. But, regardless of the number, they may be divided generally into two classes.

1. Those who could prepare, but do not.
2. Those who would prepare, but cannot.

Ability Impeded.—This class includes all those pupils who have the necessary power to prepare, but are prevented in some way from exercising it. The essential conditions of study may be wanting, and others may interfere, and thus aid in sending the pupils to the recitation unprepared.

(a) *Poor health may keep a child from study.* There are some instances where a strong mind in a frail body has accomplished great results in the domain of investigation. Pope's mind was vigorous though his body was feeble. Alexander H. Stephens, in spite of physical weakness, was a great power in the Senate; so was Thaddeus Stevens, the great Commoner, in the House. Grant faced death and physical infirmity, while, with peerless power of concen-

tration, he wrote his "Memoirs." But these are exceptions. Such work is possible only with persons highly trained in the art of study, or with those backed by an unbending will. But in the ordinary school, and especially with children, it is idle to expect vigorous mental efforts if vigor of body is lacking. Good bodily health, then, is the first requisite of all who would do effective work in the preparation of a lesson.

(b) *The lack of bodily comfort may prevent a student from doing effective work.* He may be too warm or too cold. He may lack a sufficient supply of fresh air to support vigorous mental action. If the preparation is made in the school-room, teachers and directors may regulate the conditions that contribute to bodily comfort. If it is done in the home it becomes a question for parents. But success in either case will depend almost as much upon the student's bodily comfort as upon his health.

(c) *Noise and confusion may prevent a student from making effective preparation.* Emerson says, "I envy the abstraction of some scholars I have known, who could sit on a curbstone in State Street, put up their back, and solve their problem . . . All the conditions must be right for my success, slight as that is." And years ago in London, Carlyle, Dickens, Tennyson, and Browning were so annoyed in their work that they signed petitions against the license to organ-grinders who visited the streets near their homes to levy blackmail on them. Occasionally one finds a man with well-developed power of concentration whose mind is the ready servant of the will, and who, impelled by an absorbing purpose, can apply himself to the work at hand regardless of unfavorable environment. If the great masters named above could not do so, we should scarcely expect the child, with little power of concentration, and with feeble habits of study, to do good work, unless the external conditions are favorable.

(d) *Lack of time may prevent the pupil from making effective preparation. This may be due to many causes.*

The student may be attempting to carry so many branches that he has not sufficient time for preparation in all, and intensity is, therefore, sacrificed for superficiality. This condition exists in some schools. The enlarged curriculum should not be permitted to make impossible demands upon the child.

So much time may be given to the work of reciting that there is little time left for preparation. When a class is not making suitable progress, the teacher is likely to extend the time of the recitation in order to give more help. This curtails the time of the study period. This condition is found in upper grammar grades and in high schools where the teachers have charge of but one class. In grades of two classes, each class has half the time for study.

Such social claims may be made upon the child outside the school as will leave him little time for study. This is a matter for the consideration of parents. Right effort wisely directed is the only true measure of an education. As you give this effort, in the same measure shall you receive power. This is the law, and parents should know it. They should know that the social butterfly is rarely a scholar, not perhaps for lack of ability but for lack of effort.

(e) *The absence of regular habits of study and regular hours of sleep and exercise may prevent a pupil from making effective preparation.* Habit is the result of practice, and regularity and system in practice give rapidity to its growth and capacity to its effort. Persistent effort wisely directed at regular intervals soon forms correct and efficient habits of study. Teachers can do much to form this habit by requiring systematic effort at regular periods. Vigor of mind, as we have observed, depends to some extent upon vigor of body, and both are greatly affected by the child's regular hours of sleep and exercise, during which the brain-

cells are recharged with vital energy. Regular hours of sleep, exercise, and study are, therefore, conducive to the child's best effort in preparation.

(f) *Then there is a small number who could prepare, but will not.* They seem to live outside the influences that ordinarily lead to effective study. They evade the tactics of slipshod management and haphazard teaching, and occasionally worry the wisest and the best of teachers. The springs of interest seem closed, the desires of ambition are hushed, the electric wires of inspiration are beyond the touch. This class, however, is exceedingly small, and when a teacher has exhausted all his power upon them there is left but two alternatives—endurance or removal.

There is still some human drudgery in the world. The iron-ribbed giants of steam and of steel have not monopolized everything in their field. They may never do so. And the mere human drudge, the physical engine without intelligence and its inherent powers, may always be able, in competition with these steel-clad giants, to eke out a miserable existence in the lowest sub-cellar of the industrial world, and live on the crumbs that fall from the well-laden tables at which he might have occupied a seat.

(g) *There are some pupils who do not prepare because they lack interest in the lesson.* This class may be reached and helped through the *laws of acquired interest*.

The Willing Hindered.—This class includes all those pupils who are anxious and willing to study, but who for some reason lack the power. They take the time and make the effort, but accomplish little. Their failure may be due to one of three causes or perhaps to all.

(a) *Some pupils cannot study because they lack the fund of related ideas necessary to the examination and interpretation of the subject matter of the new lesson.* The child learns with what he has. As money earns money, so truth acquires truth. An empty mind cannot acquire. It

is entirely passive. It has a great capacity to be filled, but no power with which to do the work. The pupil, then, whose mind is empty along the line of the subject matter to be known may give time and effort to the act of study, and yet accomplish very little.

(b) *Some pupils cannot study because they lack the power of concentration.* The mind must not only have something with which to acquire and interpret new truth; it must also be able to take that acquired stock and concentrate it upon the new thing. Concentration is the power of the mind to fix what it has on what it wants. It helps the mind to get what it wants with what it has. Study is the act of knowing through the use of what we know, and through the power that comes from that use. And the pupil who lacks the power to concentrate his mind upon the subject, like the pupil who lacks the fund of similar facts, will get little from the study of a lesson regardless of the time he gives to it and the effort he makes.

(c) *There is also a class of students who would prepare the lessons, but cannot, because the work is too difficult for them.* Their fund of related fact and their power of concentration are insufficient for the work at hand. They are the victims of poor judgment in classification, and the remedy in all such cases is better judgment. Such errors in classification are moral wrongs as well as intellectual blunders. For it is the child's right to be in the class that will give him the highest and best return for his time and effort. More blunders, however, are made in classifying children below rather than above their capacity for a certain grade of work.

8. WHAT TO DO WITH THE UNPREPARED

What to do with the unprepared in the recitation is a problem as difficult as it is important, and as practical as it is difficult. It is not possible to answer this question

fully, for some failures are inexplicable. In spite of the best methods of collection there are some losses through delinquents in the business world. So there will possibly be some losses through delinquents in the recitation, even when managed by the most skillful.

The Unprepared.—With reference to those who could prepare, but do not, two suggestions seem wise :

(a) *Remove the cause.* This is not always easily done. But bodily discomfort, noise and confusion, lack of time, and the absence of regular habits of study and regular hours for sleep and exercise will in time yield to the tact, force, and insight of the wise executive, the resourceful manager, and the efficient teacher.

(b) *Expect preparation. Insist upon it. Demand it. Never teach without it.* Children are good judges of human nature, and many will not work if they can evade it. But in most cases they will yield if it becomes necessary. There is generally only one balky horse among many' and it is often the result of poor management. Under the care of a skillful driver the trouble is frequently removed. So teachers are sometimes to blame if lessons are not prepared. The efforts of the pupils will not rise above the expectations of the teacher. Social claims and unfavorable conditions yield to the teacher who will not yield to them. Most children will finally do just what the requirements demand.

Those Who Would, but Cannot.—But with reference to that other class who would study, but cannot, the treatment is very different. If the child lacks the power to study, very little will be accomplished by the reassignment of lessons or by the rigid demands of the teacher. The cause in such case is subjective, not objective, and will therefore be found more difficult of removal. Some general suggestions, however, may be made that will prove helpful.

(a) *Let oral instruction in a new or difficult subject precede book study.* This is very important at that part of the course where the child is to begin the study of the text in history, geography, grammar, or physiology. This oral instruction gives him a working stock of acquired truth and some power to use it in the examination of the text. This instruction should be based as much as possible upon sense-perception. Ideas precede words. This is the law. The child should see, hear, handle, and examine; that is, get his percepts through the senses until conception is possible without sense-perception. It is difficult for the child to get concepts from the book unless he has a stock of ideas on the same subject. It is wise then, with young children, to have oral instruction pave the way to textbook study. And if the lessons are difficult, and the pupil not well equipped for the art of study, the same rule applies in any grade.

(b) *Study the lesson with the pupils during the recitation.* The purpose of this is to train them how to study. This may be done with all, or with that part of the class that has failed to make suitable preparation. In the latter case, the bright pupils who know the lesson because of thorough preparation may be excused and assigned other work. To study the lesson with the delinquents is a valuable exercise. It gives them a body of ideas and fundamental facts about it. It will also develop the power to use the mind and this body of facts in its unaided effort to investigate and know, and thus help to train the children into right habits of study.

(c) *Have frequent study recitations for the express purpose of training the children how to study.* In such cases the pupils have the text open before them. The teacher guides the effort of the class. Questions are asked, and the pupils are directed to that part of the text that either contains or suggests the answer. Suggestions are made,

hidden truths are revealed, lines of investigation pointed out, leading thoughts examined, causes investigated, results anticipated, analytic parts discovered, and their similarity and dissimilarity noted—all with a predetermined aim to train the child in the art of study. Thus under the direction of a skillful teacher, children soon discover that to study is not to memorize the text, but rather to discover and understand the points, parts, causes, and their effects. Such a study recitation fails to cover as much ground, perhaps, as a regular one in which all are prepared, but it is almost as valuable in giving a knowledge of the lesson, and more valuable in training in the art of study.

(*d*) *Emphasize the teaching phase of the recitation.* The recitation is the period in which the teacher teaches, tests, or trains. Its results are knowledge, power, and skill. Emphasis may be placed on any one of these processes, and consequently augment the corresponding result. But the recitation in many instances is permitted to lose its vitalizing power as an instrument of instruction, and to degenerate into a mere examination through which to test the child's preparation. In the teaching process, the mind *gets*; in the examination, it *gives*. The art of study is a process of acquisition. The teaching recitation, therefore, far surpasses the examination in the power to train children in the art of study. And a child's incapacity to study may be due to the fact that it has been examined rather than taught.

(*e*) *Never teach without the attention of the entire class.* A listless pupil is generally a poor student; and he may be a poor student because of his listlessness. Attention is the self-directed effort of the mind to see, to grasp, to know, to understand. The mind that is required, or rather induced, to make that effort day after day in the recitation is rewarded with knowledge, power, and skill, and is thus not only prepared for study, but to some extent trained in

the art. Much of the poor preparation on the part of the children has its tap-root in the lack of attention. Complete mental devotion to the subject under consideration always gives power to devote the mind to the work of study. Mental effort gives mental power. Nothing else does. Attention is the act, the effort of the mind to get; it therefore develops the getting power of the mind, the very power used in the art of study, and thus trains that art.

(f) *In the assignment of lessons give hints, outlines, and suggestions that will aid in its preparation.* Assign the work as far as possible so that there is a unity in each lesson. Point out that unity and suggest its parts. Start the class at the right point, head them in the right direction, show them the objects they are to investigate, and point out the ends for which they are to search. Outlines, indicating certain investigations and asking for certain information, are very helpful. A series of questions put before the children, to which they are to find answers, will greatly aid in the work of study.

(g) *Have a study programme with regular hours and periods for work.* Effort leaves a tendency to repeat itself. And systematic effort at regular intervals soon makes this tendency strong and effective. It conserves energy, saves time, develops attention, strengthens self-determination, and trains the will through the determined execution of a definite purpose. All this aids in forming habits of study by giving the mind power to act firmly, regularly, and effectively in a given direction.

If possible, during this period, the teacher should give any special aid an individual may need. The so-called slow pupil may be lacking only in the power to study. He may be unable to think, or may have feeble powers of thought. A hint may start the process of thought, or give vigor to its feebleness. The failure to solve a problem may be due to a failure to grasp and understand its condi-

tions or the principles upon which they rest. The teacher may focus the similar light the pupil possesses upon these conditions and principles, and that which was dark will become luminous to the child, and the problem itself will suggest the solution. The source of power is within, and a little aid on the part of the teacher will greatly help the student in his efforts to utilize it.

Study is the greatest of school-room arts. Its contributions outrank those of any other exercise. It is the shortest, safest, and surest route to culture, attainment, and power. It is at once the price and the measure of each. The desire to study, the capacity for study, and the habit of study are priceless gifts to the race. They generally spring from within, although they may come from without, the school. But regardless of their source, they have made humanity their debtors. They have revealed all knowledge, stated all principles, formulated all laws, constructed all sciences, organized all effort, established all civilizations, annihilated all errors, promulgated all religions, forged the shafts of all progress, and reared to the heavens the eternal towers of revealed truth. How important, then, that the conditions of study be favorable, that the objects of study be definite, that the philosophy of study be clear, that the habits of study be strong, and that the suggestions about study be helpful!

TOPICAL OUTLINE

THE ART OF STUDY

I.—POSSIBILITY OF STUDY.

1. The unity of truth.
2. The capacity to know.
3. The working content of the mind.
4. The possibility of study.

II.—CONDITIONS OF STUDY.

1. Physical or objective.

- (a) Bodily health and comfort.
 - (b) Abundance of pure air at a normal temperature.
 - (c) Freedom from noise and confusion.
 - (d) Regular hours for study, sleep, and exercise.
2. Mental or subjective.
- (a) Interest in the lesson.
 - (b) Ability to study.
 - 1. As a store of related facts.
 - 2. As the power to concentrate.

III.—OBJECTS OF STUDY.

- 1. A well-formed mind.
- 2. A well-filled mind.
- 3. A well-rounded character.

IV.—THE PHILOSOPHY OF STUDY.

- 1. The act of study defined.
- 2. The process of study explained.
 - (a) The stage of apprehension.
 - (b) The stage of comprehension.
 - (c) The stage of application.

V.—HOW NOT TO STUDY.

- 1. Not by idly reading the lesson.
- 2. Not by memorizing it.

VI.—HOW TO STUDY.

- 1. Have a definite purpose in the study of every lesson.
- 2. Read the lesson carefully as a whole and try to discover its leading thought.
- 3. Concentrate the mind upon the facts with a view of comprehending them.
- 4. Try to know what the facts *are*, what they *mean*, and what they *teach*.
- 5. Note Jacotot's plan.
 - (a) Learn, (b) reflect, (c) verify, (d) repeat.

VII.—THE UNPREPARED IN A RECITATION.

- 1. Those who could prepare, but do not.
 - (a) Prevented by ill-health.
 - (b) Prevented by bodily discomfort.
 - (c) Prevented by noise and confusion.
 - (d) Prevented by lack of time, due—

1. To too many studies.
2. To a curtailment of study periods.
3. To social claims.
- (e) Absence of regular hours and habits.
- (f) Those who lack interest.
- (g) Those who will not study.
2. Those who would prepare, but cannot.
 - (a) Because of the lack of a fund of related truth.
 - (b) Because of the lack of the power of concentration.
 - (c) Because of errors in classification.

VIII.—WHAT TO DO WITH THE UNPREPARED.

1. With those who could prepare, but do not.
 - (a) Remove the cause.
 - (b) Expect preparation.
2. With those who would prepare, but cannot.
 - (a) Let oral instruction precede book study.
 - (b) Study the lesson with the pupils during the recitation period.
 - (c) Have frequent study recitations.
 - (d) Emphasize the teaching recitations.
 - (e) Never teach without attention.
 - (f) Give hints and suggestions in assignment of lessons.
 - (g) Have a study programme.

CHAPTER VI

PARTS OF THE RECITATION

The whole is greater than any of its parts.—SELECTED.

WE have studied the recitation in its unity and pointed out what seemed to be some of the characteristics that determine its value. We are now to examine it from the analytic standpoint, and, if possible, separate it into the parts that form that unity and make a careful study of each.

Taken in its broadest sense, a recitation is an exercise in which the teacher tests, teaches, or trains, and through which the child acquires knowledge, power, or skill. As such it naturally subdivides itself into three parts:

1. The testing part.
2. The teaching part.
3. The training part.

Teaching, in a sense, is a spiritual process. Any attempt, therefore, to analyze it will be more or less mechanical. But notwithstanding this fact, it may be helpful in our study to regard these divisions as separate and distinct parts, at least in aim and process, and to some extent different in results.

It is well to observe, however, that these parts of the recitation are not always found operating in separate and distinct periods of time that are easily discerned. The teacher may sometimes use a given period for testing, another for teaching, and still another for the work of training. In such case the process involved is continuous throughout the period. But in other cases one of these processes may displace the others in such rapid succession as to make them seem almost simultaneous. But expertness in teaching demands that the teacher recognize the aim, the content, the limitations, and the results of these three

processes, whether they follow in separate periods clearly discernible or displace one another in rapid succession.

These are the three fundamental parts of the recitation, and to them may be added the following, not so important and yet worthy of a place as a separate division :

4. The assigning part.

By this we mean the assignment of lessons. We prefer to regard this as a separate part, not so much because of its aim or effect, but because it generally occupies a separate period of time.

1. THE TESTING PART

This is the part in which the teacher tests the child's preparation, power, or skill. It is a kind of examination. In it the child tells what he knows of the lesson. This includes what he has learned through study and preparation and what he has gathered from every source. The testing may be done through the medium of oral or written expression, and in response to either the question or the topic method. But in practice, regardless of method or plan, it is practically a testing, not a teaching, exercise. If the student is somewhat advanced in the art of study, he may be able to give many, perhaps all, of the facts of the subject matter, to explain their meaning, and even to abstract from them their hidden lessons; but it is principally a searching process, a kind of examination in which the pupil does little more than state what he knows.

This is an essential part of every recitation, but it is not the only part, nor the most important part. For while it may occasionally impart some knowledge and thus instruct the child, its main purpose is to get, rather than to give; to test, rather than to teach; to recite, rather than to think. It is the easy part of the recitation, demanding less ability and less skill on the part of the teacher than the work of instruction. And the danger is that the young, inexperienced

teacher mistakes this part for the whole recitation and thus really never makes a specific effort to teach.

The valuable results that come from this part of the recitation may be summarized as follows:

1. It tests the pupil's preparation.
2. It tests the pupil's general knowledge and ability to study.
3. It cultivates the memory.
4. It trains in the art of expression.
5. It gives some skill and mental discipline.
6. It reveals the child's limitations, and thus indicates the point where instruction and drill should begin.

2. THE TEACHING PART

The second part of the recitation is the teaching part. As its name implies, it is devoted to the work of instruction. In it the teacher *teaches* and the child *learns*. This is what Doctor White calls giving a lesson. It differs essentially from the examining part. The one tests, the other teaches; the one examines, the other instructs; the one trains the child to *give*, the other to *get*. In the former the mind delivers what it has discovered, in the latter it discovers what it may deliver.

The Purpose.—In this part the purpose is to examine both the known and the unknown. The child is led to see familiar facts more clearly, comprehend them more fully, and think of them more vigorously. This may be done to some extent by the testing process. But the main purpose is to pass beyond the region of the known, to examine, investigate, and explore the realm of the unknown in fact, and especially in thought. By questions and suggestions the teacher directs the work, but does not do it. He incites interest, points the way, removes irrelevant rubbish, focuses attention on the spot where the discovery in fact or thought is to be made, and flashes as much light as possible into the region of darkness. The aim is to illumine the way and

direct the thought, but yet to allow the pupil to do his own thinking and to receive the stimulus and the reward that come as a result of discovery. The child looks and listens. His whole mind, not part of it, is directed to the one thing under consideration. He sees nothing in the universe for the moment but the point at issue. At that point is concentrated all the light and energy of his mind. He examines, analyzes, compares, discovers, and concludes. The mists rise, the fogs scatter, the light dawns from within, and *the unknown is transformed into the known*. As a result of this the pupil sees new facts, discovers new truths, thinks new thoughts, comprehends new relations, forms new opinions, and reaches new conclusions.

The teaching process is the dominant feature of this part of the recitation. And it is to be noted that the vital part of this process from the pupil's standpoint is that he be aroused to independent thought. Without this everything else is vain. The supreme duty of the teacher is to stimulate and direct the pupil's thought, to project it toward some specific end, known to him, but as yet unknown to the learner. The point of beginning is some known fact or relation. The child is led to think about it, to compare it with others, to note their similarity or difference, and to arrive at some definite conclusion. In a similar manner other conclusions are reached. These conclusions are in turn examined and compared; their similarities or differences noted, and a new conclusion is reached. Thus the child thinks his way from the known into the unknown. His conclusions are the milestones of his progress, the advance guards of his thought, the great circles of mental illumination where darkness is dispelled by light, where the unknown is illuminated and identified by the known. It is thinking that carries the child forward and upward in his work, and conclusions are the periods that mark the completion of acts of thought and separate one from another.

Thinking is hard work, but in the teaching process it

is necessary. For while presentation may be clear ; illustration, luminous ; suggestion, definite ; statement, strong ; and argument, convincing, they can accomplish little on the part of the teacher unless the pupil individually is aroused to thought. Thinking is at once the compass that guides and the boat that carries the child forward toward the desired end. And while the teacher thinks with the child, he must not think for him, for the royal prerogative of every child in this part of the recitation is to think.

The aim of the teacher, then, in this part of the recitation is to arouse and to direct the child's thought. This purpose may be accomplished through exposition, definition, explanation, suggestion, and statement. But the leading instrument of the teacher's power is the question. With it he arouses the slumbering faculties, stirs the stagnant energies, and stimulates the dormant activities ; by it he sustains the interest, challenges the attention, and opens the very throttle valves of thought ; through it he guides the progress of the investigation, directs the child's mind to the very spot where the new conclusion lies concealed, and at the right moment aids in lifting the veil that hides it. And the teacher's worth is largely determined by his ability to use the question as an instrument of thought and instruction.

Telling and Teaching.—In this part of the recitation the teacher, or some member of the class, often adds new facts not found in the text, yet closely related to its subject matter. We are told that "telling is not teaching" ; and we are so accustomed to accept this old maxim that we scarcely stop to think about it. Telling in the recitation may or may not be teaching. When the mind, as a passive receptacle, receives truth, telling is not teaching, because the fuel falls upon extinct fires, and there is no responsive action, no interpretation, and no assimilation. But when the testimony is as fuel to a living fire, and results in stimulated action and reflection then telling is teaching. In the university and the college, in the pulpit and on the platform.

the lecture is regarded as a legitimate method of instruction. and while it would be unwise to use telling as a *method* of teaching in the elementary school, it is equally unwise for the teacher never to supplement the text with that related matter which the child should know and which is not of sufficient importance to reward him for individual investigation. Indeed, we get much of our information from testimony—the testimony of lecturer, preacher, editor, author, and the teacher who fails to add needed information, ignores an important source of truth to the child.

In the testing part the work seldom goes beyond the confines of the text; but in this, lines of thought may be followed to outside sources—to teacher, to pupil, to other texts, and to higher authorities. The teacher, or the class in the socialized recitation, may assign certain questions to individuals, and ask them to post up and report at some future time. In short, reliable information from any source may be added by either teacher or pupil, provided that it is closely related to the subject matter and will contribute to the interest and profit of the class. It is always wise to examine and discuss this added information, in order that it may be made that kind of telling that is teaching.

The teaching part of the recitation is its most important part. Like the examination it also tests and trains, but it does more:

1. It instructs the child.
2. It gives mental discipline:
 - (a) By verifying fact.
 - (b) By examining testimony.
 - (c) By substantiating evidence.
 - (d) By confirming statement.
 - (e) By comparing relations.
 - (f) By discovering their similarity or difference.
 - (g) By reaching new conclusions.

3. THE TRAINING PART

Both the teaching and the testing parts of the recitation to some extent train. But the training they give is insufficient in itself. It must be supplemented by special practice devised for that purpose and directed to that end. This may be done on certain days or on separate occasions, but it is generally done in the recitation, and may be regarded as a legitimate part of it.

This part of the recitation is sometimes called the drill. Its purpose is to deepen impressions, to break or form habit, and to give the child that mental or physical exercise that will result in skill, dexterity, efficiency, and power.

These are not the direct results of instruction. You cannot teach a child skill. It must be acquired by him through *suitable practice*. The aim of every drill, then, is to so exercise the eye, the ear, the hand, the tongue, or the mind on that *plane*, at that *rate*, and with that *purpose* which will result in giving them the ability to do easily, rapidly, and accurately what is required of them. To this end the teacher, in giving a drill, should keep in mind a few fundamental facts.

The Basis of Skill.—Drill through practice gives skill. Practice produces proficiency. This is the basis of all trades, all games, all arts, and the law through the operation of which all skill is acquired. First efforts are always crude and clumsy. They waste both time and energy, but they leave a tendency and an aptitude to repeat themselves. These grow stronger with each successive effort. Each act is easier and more efficient than its predecessor, because of this accumulation of inherited tendency. The new tracks, made so laboriously by first efforts, soon become the beaten paths along which impulses and impressions rush with ease and facility. "Practice makes perfect." It gives far better results than the products of earlier efforts, and it gives them

at a cost greatly reduced in time and energy. Thus drill gives skill—that is, the power to do with ease, accuracy, and rapidity what was at first difficult and laborious.

Aim in Practice.—Practice must be clear and definite in aim. Practice alone is not sufficient. Aimless effort is almost useless. Indeed, it is sometimes harmful. It is automatic and mechanical. As such it suppresses the interest it should excite, induces the indifference it should dispel, represses the effort it should encourage, and destroys the attention it should arouse. It is useless because it fails to do what is needed, and harmful because it perpetuates errors instead of removing them.

But clear and definite aim energizes and directs effort. It makes practice both inspiring and efficient. According to Comenius, "We learn to do by doing." This maxim is true when it refers to the general law that drill gives skill. But it is scarcely a sufficient guide for the teacher in this difficult work. McLellan thinks it more appropriate to say, "We learn to do by knowing." This change sheds needed light. A knowledge of what to do and how to do it must always guide the act that is to be efficient. Practice not based upon and guided by positive, scientific knowledge is often dangerous. The physician whose practice of medicine is not based upon scientific knowledge is a quack. There must be science back of art to guide it in practice, if that practice is to be safe and efficient.

This is practically the view of Doctor Schaeffer, who shows in *Thinking and Learning to Think* that this maxim is not a principle of education that is universal in its application. He speaks of a young man without a knowledge of medicine who was willing to prescribe for the sick in order to learn the effect of drugs, and who, without a knowledge of surgery, was willing to amputate limbs that he might learn the art. But the people were too wise to give him an opportunity to "learn to do by doing."

The same authority says: "No one in our day would advocate mere blind doing as a means of learning. The maxim must refer to doing guided by an intelligent will. The doing must be guided by thinking that is based upon correct and reliable data or premises."

But the maxim may be examined from another viewpoint. Doctor White regards it as a half truth and adds the other half by saying, "We learn to do by doing under the inspiration and guidance of true ideals." Practice is thus not sufficient in itself. It must be clear and definite in aim. True aims are idealistic. They are more than mere models to guide. They are also dynamos that move to action and magnets that draw. True aims lift, inspire, and guide.

It takes blind practice a long time to become proficient. A boy placed in a blacksmith's shop with all the necessary tools and materials may, without aid, become a crude sort of mechanic, but it will be only after years of wasted time and at the cost of much wasted material. His practice must be inspired by clear and definite aim, by models of accuracy and excellence, and guided by scientific knowledge. So the highest degree of skill and efficiency in any school-room art comes from practice that is inspired by definite aims, by models of excellence, and guided by scientific knowledge.

Rate of Practice.—Practice must be adapted in time to the capabilities of the child. Some artists are slow workers, but tediousness is not necessarily a factor in skill. On the contrary, its elements are ease, accuracy, and rapidity. Each of these is of some importance, and none should be neglected. The child who can do a piece of work easily and accurately but very slowly, lacks an important element in skill, and therefore needs drill. The purpose of drill is to secure ease of execution and excellence in result in the shortest possible period of time. To do this, the time element in practice must be carefully watched, and the rate

of drill adapted as far as possible to the capability of the child. The child who writes slowly will never become a rapid penman without some accelerated movement in practice. Drill pitched at the right point, and given at a rate that demands accuracy while it reduces the time required toward a minimum, will by and by make the pupil that is slow in mathematical calculations, rapid.

At what rate then shall the drill be given? No definite answer is possible. The ability and the capability of the child and the characteristics of the exercise must decide. It must not be too rapid for the slow mind nor too slow for the quick one, else it is discouraging to the former and useless to the latter. It should be just rapid enough to allow, not a few, but a large number of pupils to complete the exercise with accuracy and excellence, while it constantly reduces the time element to a minimum. And great care, insight, and judgment are needed on the part of the teacher thus to regulate the drill in time to the capability of the individual or the class.

Practice Adapted to the Ability of the Child.—The practice must be adapted in degree of difficulty to the powers of the child. Skill is the ability to perceive and to perform, the power to discern and to execute. It therefore implies strength. Now strength comes from struggle and the extent of the strength is determined by the vigor and the character of the effort. The athlete who always lifts light burdens has little strength for heavy ones.

Great strength cannot be developed by making things easy. The material for practice, then, must be nicely adjusted to the capability of the child, and graded in harmony with the degree of strength the exercise is intended to give. If it is too easy it gives little strength in return, quenches the fires of interest it should kindle, and disgusts the child it should encourage. If it is too difficult it may fatigue to the point of exhaustion the

powers it was intended to strengthen, discourage the child it ought to stimulate, and keep him plodding on the race-course where he is expected to run. The practice, then, that would prepare the child to do difficult things with ease, excellence, accuracy, and rapidity, must be difficult enough to test and develop the needed strength, and yet not so difficult that it is discouraging and dangerous.

Fidelity in Practice.—Practice must be diligent. Diligence is faithful application to some kind of work that has a strong hold on the feelings. Practice that is idle, indifferent, and careless is of little value. It must be conscious, earnest, inspiring, and careful. It must be pitched at the point that demands the child's best effort. Without this he may write and yet not improve in penmanship; he may say the words of a lesson and not increase his facility to get thought and to give fluent and elegant expression to it. The heart must stand back of the head and the hand, and zeal and desire must give vigor to effort. The drill that is lifeless, automatic, and perfunctory, is useless and degrading. It is the chief stock in trade of poor teaching. But the drill that really trains, that gives ease and excellence, accuracy and rapidity in the largest measure, is always inspired by interest, zeal, earnestness, and by conscious care and fidelity. Roark says, "The rule of first importance in drilling is that the *interested consciousness* of the pupil must be evoked throughout the exercise; mere drill monotony of repetition is not drill. Gain in power and skill is made in the same degree in which—to use Matthew Arnold's fine phrase—"*consciousness permeates the work.*"

The training part of the recitation, then, is the drill whose chief purpose is to deepen impression and to give the child skill. *And skill is always the result of diligent practice, based on scientific knowledge, inspired by right*

aims, guided by right principles, and graded in time and degree to the capabilities of the child.

This part of the recitation is much neglected. Few teachers seem to appreciate the training value of the drill, and very few understand how to use it to advantage. As a result, the pupils in our schools lack skill. They know something of penmanship, but they cannot write with ease, excellence and rapidity. They understand something of drawing, but their efforts in the art are clumsy and commonplace. They have some knowledge of grammar, but cannot speak or write with force and accuracy. They comprehend some mathematical principles, but their efforts to apply them in the solution of problems are laboriously slow and distressingly inaccurate. And all these defects, serious as they are, are often due, not so much to lack of instruction, as to the negligence or the imperfections of drill.

The materials for practice in all drills should, as far as possible, be crisp and fresh. Old exercises, examples, and problems which the mind has formerly used and understood are of little value. The problem, for instance, that was solved and comprehended in the preparation is not the best problem for the drill. A new one, similar, yet different in some degree, is far better. The same is true in grammatical drills—in fact in any drill. In some schools the pupils solve and explain in the recitation the same problems they solved and understood in the preparation of the lesson. They use them again in the drill, notwithstanding the identical problems were used in the same way two or three times the previous year. Such a plan is not only uninspiring but, is also, in a large measure, non-productive of the best results that should come from drill. The repetition of some things is necessary, in others it cannot be well avoided. But drill, as far as possible, should use new material.

From this discussion it is evident that the drill occupies an important place in every class-room. It possibly deserves more attention than the test, and is second only to the work of instruction. Its chief advantages may be stated as follows:

1. It trains the memory.
2. It trains in the art of expression.
3. It aids in the formation of habits.
4. It gives skill in the school arts.

To teach, to test, and to train are the fundamental aims of the three corresponding parts of the recitation. They name the process that is dominant in each, and only a word is necessary as to the logical order in which these processes should be used.

It is evident that a pupil must have knowledge before he can be tested in it or trained by it. Consequently with little children, who cannot acquire a knowledge of a lesson by study, the teaching exercise comes first, the drill possibly second, and the test last. This order, however, may be changed, if the knowledge used in the test and the drill was acquired at some former time. But with pupils advanced in the art of study, the teacher may first test preparation, then teach and train, if the new matter is to be the basis of the drill, or train and then teach if formerly acquired matter is to be used. In such cases the test coming first reveals the extent of the pupil's knowledge, and consequently the point at which instruction should begin, as well as the necessity and the scope of the drill.

4. THE ASSIGNING PART

The fourth part of the recitation is that devoted to the assignment of lessons. It is not as important, perhaps, as the others, yet it deserves the careful attention

of every teacher. In discussing this subject four prominent points demand consideration :

1. The time to make the assignment.
2. The purpose of the assignment.
3. The extent of the assignment.
4. The character of the work to be done in making the assignment.

The Time to Make the Assignment.—What is the proper time to assign a lesson? Two answers may be given to this question. The proper time is either at the beginning or at the close of the recitation. If the pupils are young and cannot use to advantage the art of study, it is wise perhaps to make the assignment at the close of the recitation. The objection to this is that the teacher and pupils are more or less exhausted, and the assignment may, therefore, not accomplish to the fullest extent its purpose. The same objection holds if the order is reversed. For if the assignment precedes the teaching exercise, the teacher and pupils are not as fresh and vigorous for the work of instruction as if it came first. With young pupils, then, it seems best to make the assignment at the close of the recitation.

But with advanced pupils the assignment should be made at the beginning of the recitation. Coming at the close of the period the assignment is likely to be made hastily, in the most perfunctory manner, and with little interest and profit to the pupils. At the beginning, however, it is more likely to receive its full quota of time. The teacher is mentally fresh, keen, and incisive, and the pupils alert and active, ready to seize and use to advantage any suggestions made concerning the new lesson. The assignment is not merely to designate the extent of the next lesson, but to train the pupil in the art of study. And since this art, with advanced pupils, supersedes in importance

every other school exercise, the beginning of the recitation is the most opportune time to make the assignment.

There is, however, an objection. If lessons are not well prepared they are often reassigned. And if the assignment is made at the beginning the teacher may not know whether to assign a new lesson or to reassign the old. This is true; and yet it is scarcely a sufficient reason for not making the assignment at the time when it will best accomplish its purpose. And in all such cases the reassignment would simply take its place.

The Purpose of the Assignment.—The purpose of the assignment is to designate definitely the extent of the lesson, to point out the aim, the purpose and the end of the pupil's effort to prepare it, and to instruct him how to proceed in order to attain those ends. Such an assignment does more than mark off the extent of the lesson; it aids the pupil in its preparation, and actually trains him in the art of study.

The Extent of the Assignment.—What shall be assigned? Many teachers dismiss this question with little consideration, and simply designate so many pages or paragraphs. Every recitation has a definite purpose, and this in a measure will determine the extent of the assignment, just as an order for lumber is determined by the use that is to be made of it.

The assignment should be definite. And as far as possible it should be a unit or a group of units. But it should also be a link in the chain of instruction. The unity in a lesson is important. The mind grasps wholes before it analyzes them into parts. And if the lesson assigned has no unity, the pupil's mind is somewhat baffled at the beginning of its work.

The assignment may be a process, a paragraph, a chapter, a topic, or a unitized group of topics. What the

link is, how it unites with the preceding one, and how it is to be joined with what is to follow, must be wrought out by the child in the preparation, or by the teacher and the child in the recitation.

The Character of the Assignment.—What shall the teacher or the class acting as a social unit do in making the assignment? The answer to this question is as difficult as it is important.

Mental effort is important. Nothing else can ever take its place. The teacher, then, who does the work for the child robs him of the vital results that reward effort and of the joy that crowns achievement. The teacher who withholds needed aid swings to the opposite extreme. The question of just how far the teacher shall aid the child is vital and not less important in the assignment than in the teaching exercise. It must always be determined by the capacity of the child and the character of the subject matter. No rule, absolutely positive, is therefore possible.

The whole aim of the assignment is to designate the extent of the lesson, to direct the pupil in its preparation, and to train him in the art of study. Its extent should be made clear and positive. The teacher should arouse and if possible, intensify the interest of the class in the subject matter. Its unity may be pointed out and its essential features designated. Attention may be directed to specific aims and to legitimate lines of investigation. Outlines to guide, questions to aid, and suggestive hints to help may be given. Reference books may be named, maps and charts designated, and lines of approach carefully marked out. This implies careful preparation by the teacher and the use of a plan book with plans recorded in advance of the assignment. The battle is not fought at this point, but a preliminary view of the field and the forces is taken for the pupil's benefit.

The pupils are thus started at the right point, and, with their eyes open and their minds alert, are headed in the right direction. They have some clear and definite aims; they are looking for something specific, some particular things; they are searching for it in the right way and at the right place, so far as this preliminary aid of the teacher can guide them, and they are far more likely to find it, and thus make the study hour more profitable, than if left to themselves.

Such an assignment (*a*) saves time, (*b*) conserves energy, (*c*) encourages the pupils, (*d*) trains in the art of study, and (*e*) leads the way to larger and better results.

It is in full accord with the philosophy of good teaching, which simply points the way, designates the habitation of the desired truth and its relations, aids in their fuller comprehension, but leaves the work of discovery and the joy of achievement to reward the child for his efforts. The main purpose of each part of the recitation is set forth in the words test, teach, train, and assign. The first aims to examine the child and test his preparation; as a result it deepens impression and trains in the art of expression. The second aims to instruct the child; to enlarge and clarify the field of mental vision; to analyze its contents, discover its relations, and unitize them into synthetic wholes. The result of this to the child is mainly knowledge and discipline. The aim of the third is to train the child through practice and exercise in the ordinary schoolroom arts. The results that come from these drills may be summed up in the word skill. The simple purpose of the fourth part is the assignment of work. And this, if skillfully done, will save time, and to some extent train the child in the art of study.

TOPICAL OUTLINE

PARTS OF THE RECITATION

I.—THE TESTING PART.

1. It tests preparation.
2. It tests the pupil's general knowledge and his ability to study.
3. It cultivates the memory.
4. It trains in the art of expression.
5. It gives some skill and some discipline.
6. It reveals the child's limitations and indicates the proper field for instruction and drill.

II.—THE TEACHING PART.

1. It instructs the child.
2. It gives mental discipline.
 - (a) By verifying fact.
 - (b) By examining testimony.
 - (c) By substantiating evidence.
 - (d) By confirming statement.
 - (e) By comparing relations.
 - (f) By discovering their similarity or difference.
 - (g) By reaching new conclusions.

III.—THE TRAINING PART.

1. It trains the memory.
2. It trains in the art of expression.
3. It aids in the formation of habits.
4. It gives skill in school arts.
 - (a) Drill through practice gives skill.
 - (b) Practice must be clear and definite in aim.
 - (c) Practice must be adapted in time to the capability of the child.
 - (d) Practice must be adapted in degree of difficulty to the power of the child.
 - (e) Practice must be diligent.

IV.—THE ASSIGNING PART.

1. The time of assignment.
 - (a) At the beginning of the recitation.
 - (b) At the close of the recitation.

2. The purpose of the assignment.
 - (a) To designate definitely the extent of the lesson.
 - (b) To point out what the pupil is to do in the preparation of the lesson.
 - (c) To instruct him how to proceed.
3. The extent of the assignment.
 - (a) A unit or a group of units.
4. The character of the work done in the assignment.
 - (a) Hints and suggestions that aid in the preparation and train in the art of study.
5. Results of the assignment.
 - (a) It saves time.
 - (b) It conserves energy.
 - (c) It encourages the pupils.
 - (d) It trains in the art of study.
 - (e) It leads the way to higher and better results.

CHAPTER VII

PREPARATION, THE FIRST FORMAL STEP

Preparation is half the battle.—CERVANTES.

WE have seen that the recitation has four parts. If they are not fundamental, they are at least important. And of these the most important is the teaching part. We are now to make a special study of that part, to examine it carefully, to analyze it critically, and, if possible, to obtain a more intimate knowledge of this art of arts.

All notions are either particular or general. The former are percepts, the latter concepts. The first are the results of sense-perception, or they arise out of the examination of some particular fact or relation. The second are the products of mental action, which works up percepts into concepts. Particular notions are the raw materials of knowledge, but general notions are its finished products.

All instruction, then, deals with either the one or the other of these notions. Its effort is to give the mind percepts or to elaborate them into higher forms. The first may be called the stage of presentation, the second the stage of generalization. In presentation the mind is engaged chiefly in acquiring particular notions; but in generalization it examines and compares them, abstracts general notions from them, formulates them into definitions, rules, and laws. Generalization is thus a comprehensive term. And for convenience and clearness in discussion it may be divided into comparison and generalization proper. The first includes abstraction and association; the second, recapitulation and definition of general

truths. Application of these truths follow as the last step in the teaching process.

But there is a stage of work that precedes presentation. The mind must be prepared to receive. An empty mind cannot acquire, it cannot even give attention to the presentation. Acquisition is possible only when the mind has a working capital of related ideas and the power to use them.

Since all truth is related, and every normal mind must acquire some particular notions through sense-perception, every such mind must have at least a small group of ideas related intimately or remotely to the one to be acquired. But, thus supplied, it may have little power to use its content in the work of acquisition. This may be due to many causes. Its related truth may lack that organization which gives it its acquisitive power. It may be unable to concentrate its energies on the new thing. Or the old knowledge which ordinarily grasps and interprets the new may be passive and dormant. Indeed, the great body of knowledge is generally in a dormant condition. Groups of related ideas become active and rush forward into consciousness only when some cause arouses them. This is a wise regulation. The mind can investigate only one thing at a time; and its numberless groups of related ideas, save only what are needed in the investigation, must remain passive and be banished for the time from consciousness.

Preparation is needed to arouse to acquisitive action that part of the mind's possessions necessary to a proper reception of the new presentation. When a ball is thrown to a player, every energy of mind and body is aroused to catch it. Preparation for the catching of the ball precedes the reception of it. So preparation of mind in teaching must precede the presentation of the subject mat-

ter that the necessary group of related ideas may be aroused, organized, and ready for the work at hand.

Formal Steps.—The art of teaching includes every phase of preparation, acquisition, and generalization. Within its scope, the limits of which are generally so vague and indefinite, are involved numberless processes, both psychological and pedagogical. A discussion of each would lead us far beyond the boundaries of this lecture, out of the practical, and into the realm of speculative thought. Our purpose is rather to discuss the essential processes of the art of teaching as grouped in the five formal steps. These steps are generally designated as follows :

1. Preparation.
2. Presentation.
3. Comparison.
4. Generalization.
5. Application.

Preparation fits the mind for the reception of the new truth. Presentation presents it and gives the mind particular notions. Comparison elaborates them into higher forms. Generalization reduces these forms to the convenient condensations in which the mind holds its possessions for future use; application applies them.

These steps are not always separated in periods of time, yet they are well-defined phases of the teaching process. They are its logical and psychological subdivisions. As such they belong to, and are included in, the teaching part of the recitation, and any discussion of these formal steps is a continuation of that topic.

In this discussion it will be necessary for us to remember that the progress of instruction is from the particular to the general. Percepts, or particular notions, are the simplest forms of truth. They constitute the crude, dis-

organized, raw materials of knowledge which must be worked up into general notions, the finished products. Construction always proceeds from raw materials to finished products. The highly-organized and highly-finished mainspring of a watch was once crude ore. Numerous changes in form and structure of the ore are necessary to make it into a spring, but every change is a step in the progress of construction from raw material to finished product. What is true of construction in material things is true also of instruction when applied to the mind. The aim is to make vague notions clear; confused notions, logical; narrow views, broad; superficial insight, profound; and to lead the child from the consideration of particular ideas up to a comprehension of the great laws and principles around which a subject is organized. The progress is from the concrete to the abstract, from the simple to the complex, from the particular notion to the general concept which embodies the highest forms of organized knowledge.

Preparation.—The first formal step is preparation. This refers, not to the preparation that teacher and pupils have made prior to the recitation, but to that immediate preparation of mind that is necessary in order that the pupil may receive readily and assimilate fully the subject matter of the lesson. Its whole purpose is to prepare the mind of the learner to receive properly the new material, to put the mind into an apperceiving mood, so that the work of discovery, interpretation, and assimilation of the new material may be carried forward readily, rapidly, and successfully.

With reference to this step two suggestions seem wise and necessary:

1. The preparation must be timely.
2. The preparation must be appropriate.

I. TIMELY PREPARATION

The Preparation Must Be Timely.—In the assignment of the lesson the teacher should give such instruction and help as will prepare the mind of the child for the ready reception of the new material in his preparation of the lesson. The mind is thus prepared and stands ready to grasp, interpret, and assimilate the new material in the effort to prepare the lesson.

But the preparation that comes from the assignment, and the further preparation that comes from the act of study, are not sufficient in themselves. There must be that immediate preparation that is necessary to bring the mind to that condition of apperceptive receptivity so essential to the act of learning. The gardener not only digs the bed thoroughly, he also stirs it afresh for the reception of the seed. So the preparation of the mind for its seed must be *immediate* and *timely*.

2. APPROPRIATE PREPARATION

The Preparation Must Be Appropriate.—It is often said that each recitation should begin with a review of the preceding lesson. This is especially true with reference to that part of it that is necessary to the proper reception and interpretation of the new material.

Every recitation as suggested is a link in the chain of instruction. There is not only a point of contact, but a vital union between links. Yesterday's link must receive and unite with that of to-day, and to-day's link must be left in suitable condition to receive that of to-morrow. The review of the whole chain at stated times is wise, but a review of that part of the previous lesson to which to-day's work is to be joined is absolutely necessary.

The child acquires the unknown with and through the

known. The latter grasps and identifies the former. They are the related parts of the same subject. The child has one, but not the other, and *he must use what he has to get what he wants*. The new must be received and interpreted by the old. The child must learn with what he has. There is no other way.

But the possession of similar known matter is not all that is necessary. It must be aroused and prepared to seize and interpret that which is new in the subject matter. You cannot introduce a new friend without at the same time presenting the old one. So in the introduction of the new truth the stock of related ideas already in the mind must be brought forward into consciousness in order to receive, to know, and to assimilate the new possession. Appropriate preparation thus calls up the closely related truth formerly learned, and brings it forward in the mind to grasp, interpret, and assimilate the new matter. The similar old facts are aroused from their slumber and rush forward into consciousness, eager and ready to receive the new fact, which, ever afterward, is to be associated with them in the most intimate family relationship. The gardener prepares the seed bed, not only at the right time, but he gives it the kind of preparation which the character of the seed it is to receive demands. The bed that is desirable for one kind of seed is not always suitable for another. So the preparation of the child's mind by the teacher must be not only *timely* but also *appropriate*. The review must not only call up some past experiences, but the very experience necessary for a mastery of the new matter.

The gun boat clears for action. It removes what is unnecessary, and brings forward what is required for the engagement. So in this step the mind prepares for work by calling up what is needed, and removing to the

realm of unconsciousness, truth valuable in its place, but not necessary to the work at hand.

TOPICAL OUTLINE

I.—FORMAL STEPS.

1. Preparation.
2. Presentation.
3. Comparison.
4. Generalization.
5. Application.

II.—PREPARATION.

1. It must be timely.
2. It must be appropriate.

CHAPTER VIII

PRESENTATION, THE SECOND FORMAL STEP

Lay your plans with wisdom.—BENGEL.

PRESENTATION is just as necessary as preparation. The prepared mind cannot acquire without proper presentation any more than a prepared field can produce a crop without the sowing of the seed. There can be no life, and no crop, without a vital union between the seed and the soil. The dormant life in the seed must be brought into right relations with the elements in the soil that will arouse and feed it. The result of this union is growth. So there can be no mental development until the subject matter of a lesson is brought into that peculiar relation to the mind that will result in its stimulation and growth. And presentation is the process by which this vitalizing union is brought about.

The proper presentation of the subject matter in the teaching process is of paramount importance. For knowledge without presentation is impossible. Even the representative faculties must have some basis of presentation, however small, before they can proceed to re-present.

The subject matter of a lesson may be presented in various ways. The teacher may use the question method, the lecture method, the project method, the problem method, or, in fact, any method. The process may be analytic or synthetic, inductive or deductive. The work may vary, but the purpose remains the same. *That purpose is to bring the subject matter of the lesson to the mind in such a way that it will strive to seize and know the thing presented.*

The Twofold Nature of Presentation.—In ordinary school work ideas are presented to the mind through the ear and the eye. This is the external part, but it is not all of the work of presentation. A sick man may look at medicine in a bottle, but it will not cure him until it is received and absorbed by his system. So the presentation of the subject matter before the mind is not sufficient in itself. There must be an *inner activity* working upon the material presented. The related ideas within must be aroused to action: they must come forward into consciousness and actually seize and know the new matter. And thus to arouse and direct this inner activity is the great aim of presentation.

This is the point of failure for many. It is so easy to talk about the lesson, and so difficult to arouse and direct this inner activity, to put the mind actually to work upon the subject matter, that many well-meaning teachers substitute the former for the latter, and then wonder why the pupils make such slow progress. In the class-room you may often hear the teacher talk about the lesson, perhaps in a learned manner, deluding himself with the notion that he is teaching, while the pupils, by their indifference, their listlessness, and their lack of interest, indicate that there is no inner activity responding to his efforts. Such work is worthless. One might just as well try to explore a cave without entering it or to fill a bottle without removing the cork. Teaching is a twofold process. It requires the interested coöperation of two persons—a teacher and a learner. There must be an external effort and an internal activity responding to it. And the evidence that the mind is aroused to action by the presentation is seen in the interest and attention of the pupil. They indicate that the known within is striving to know the unknown that the teacher is presenting.

The act of teaching, then, is twofold. It includes:

1. An external presentation.
2. An internal activity.

Both are essential, and the latter, as a rule, is the result of the former. But while the mind generally responds to skillful presentation, it is under no obligation to do so. The inner activity dominates. As Rosenkranz says, "It lets nothing act upon it unless it has rendered itself receptive to it." But while this is true the external presentation, under ordinary conditions, will so stimulate the mind as to arouse that inner activity. The key to the situation at this point is interest. If the presentation is full of interest it opens the throttle-valves of mental action and unlocks the wheels of thought. If it is devoid of interest, the child is likely to turn its mind aside to the consideration of something irrelevant. The child's mind flits from one thing to another, as the bee flits from flower to flower. The bee seeks honey, the mind seeks that which will interest it.

1. EXTERNAL PRESENTATION

Presentation as an External Process.—The proper presentation of the subject matter of a lesson is not an easy task. It must vary somewhat with time and circumstances, and yet a few general principles may be stated that will to some extent guide the teacher and throw some practical light upon this phase of the work. A good presentation must have at least six characteristics: It must be *clear, strong, logical, to the point, in accordance with some prearranged plan, and complete, not fragmentary.*

Lucidity in Presentation.—Presentation must be clear. Fog is fatal to photography. The camera that would record faithfully, print sharply, and reproduce accurately, must see clearly. So the mind that would receive readily, retain permanently, and express

correctly, must see clearly. Good teaching always brings the thing to be seen and known out of the fog, and holds it up sharply and distinctly before the class. It thus tends to give accuracy, distinctness, and permanence to the impression. While a hazy presentation gives a hazy perception, and a hazy perception makes a dim impression, and a dim impression leaves an indistinct recollection that soon vanishes, and upon examination day the child has nothing, not because the subject was not presented, but because the presentation was not clear.

But the practical teacher may ask, What will enable me to make the presentation of the subject matter of a lesson clear? Though the problem itself is difficult, the answer is simple. No artist ever spread upon canvas or carved into marble the image or the form of the thing he did not see clearly, either in the realms of the real or of the ideal. But the vision of the thing to be portrayed is not enough. Many a dreamer sees angels imprisoned in stone, but he can neither release nor reveal them. The artist, in order to embody his visions, must have the necessary means, the appropriate tools, and the ability to use them with skill and precision. The teacher's tools are thought and language. Hence, the clear presentation of a lesson depends upon three conditions:

(a) *The teacher must have a clear perception of the thing to be presented.*

(b) *The teacher's thought must be direct, distinct, adequate, and logical.*

(c) *The language of the presentation must be simple, direct, intelligible to the child, and free from all confusion of terms.*

If these conclusions are correct they reveal the importance of carefully reviewing and carefully planning a lesson before attempting to present it.

Strength in Presentation.—Presentation must be strong. By strength we mean that quality of a presentation which tends to make its effect permanent. There may be many elements in strength, but three of them are of such importance as to demand our attention. They are clearness, earnestness, and repetition.

(a) *The first element in strength is clearness.* In welding two pieces of iron, the smith heats them to the proper degree, lays one upon the other, and both upon the anvil, and then delivers *a few strong blows* upon them with a hammer. This results in a permanent union. A few strong blows do what a hundred light taps would not accomplish. So, when the mind of the child is raised to the white heat of attention by the fires of interest, a clear presentation of the truth is likely to make a permanent impression. This, however, is clearness, not strength. But if clearness is not strength, it is at least the first element of it.

(b) *The second element in strength is earnestness.* This quality does not necessarily make the teacher loud and boisterous in manner. It may only be a quiet, eager, urgent effort to get the class to see and understand. But it is generally effective, for sincere, hearty earnestness is always vigorous and forceful. Alley asserts that "Earnestness and simplicity carry all before them." Heart power in the teacher is as important as head power. Sincerity and conviction are as essential as skill. The character, the individuality, and spirit of the teacher speak through his earnestness and zeal. Springing from the furnace fires of interest, earnest effort helps to raise the learner's mind to its highest degree of receptivity and to project the presentation toward it with greatest force. The result is a lesson well comprehended, deeply impressed, firmly fixed. The force of a moving body depends upon its size and rate of motion. And the whole-souled eager-

ness, the intense interest, the sincere effort, and the serious earnestness that stand back of a presentation give it both size and rate, and, therefore, help to determine the force with which it impresses itself upon the learner's mind.

(c) *The third element in strength is repetition.* Clearness and earnestness are not always sufficient. Another element is sometimes necessary. A drop of water falling upon a rock makes seemingly no impression, but if continued and repeated it grinds it to sand. Repetition, then, is an important element of strength. Hence the law: *Clear presentations, earnestly repeated, become strong ones.* Clearness aids the child in seeing the thing presented; earnestness and repetition help to fix firmly in the mind.

The number of repetitions needed to make clear presentations strong depends, first, upon the attention of the learner; second, upon the quality of his mind; and, third, upon the nature of the subject matter.

The attention of the learner is important. The mind cannot be forced to receive; it must reach out to grasp what it wants. And the degree of attention indicates the eagerness with which it strives to grasp and know the thing presented. It follows, then, that a few repetitions when the mind is most alert and impressionable are better than many when it is only indifferently attentive. A few blows when the iron is hot accomplish more than a score when it is cold.

The quality of the mind helps to determine the number of repetitions needed to comprehend and fix a lesson. Some minds are dull. They lack keen insight, deep penetration, and quick perception. They act slowly in receiving, comprehending, recording, and recalling what has been taught. They need more time to grasp a presentation and more repetitions of it to make it permanent than are required by brighter minds. Hence, the number of pres-

entations needed will depend somewhat upon the quality of the learner's mind.

The nature of the subject matter, too, will help to decide just how often a presentation must be repeated. Difficult subjects must be taught oftener than easy ones. Failure on examination may be due to the fact that while the presentation of the lesson was clear it was not repeated often enough to have the slow pupils with limited acquisitive power, grasp and retain it.

Clearness, earnestness, and repetition are the elements of strength. The first alone will not always accomplish the purpose. Neither will the first and second acting together. But no normal mind can resist the united efforts of all. For earnest presentations that are clear, if repeated often enough, must accomplish their purpose.

Logic in Presentation.—Presentation must be logical. This is not a claim for the logical as against the pedagogical, but rather a plea for a more logical presentation of that which is pedagogical. It follows the line of De Garmo's thought, that "The matter of instruction must not be presented in mass, but in small, logically connected sections." The mind must be made to associate the parts of a lesson, and to bring them into consciousness as a logical unity; it cannot be expected to comprehend a confused mass of disconnected details. The logical relation of facts and parts of a lesson must not be disregarded in the presentation of its subject matter.

Then, too, logical presentation accelerates the progress of the learner. The mind is a logical organism. It tends to act along logical lines. It seeks logical relations. Teaching is simply pointing out these relations, and learning is seeing and comprehending them. It is evident that you make more progress swimming with the current than against it. And it is just as evident that the child will

make more progress if the teacher points out these relations in the logical order in which the mind is looking for them.

But what will enable the teacher to present the material of a lesson logically? The answer is simple. (a) *The teacher must see the unity of the lesson he is to teach.* (b) *He must comprehend it also in its analytic parts and their relations and follow a logical plan of presentation.*

This suggests the necessity of reviewing subjects and revising old plans and outlines before using them. To every growing teacher the results of such a review is a clearer perception of the subject, a stronger grasp of its unity and analytic relations and a plan of procedure more logical, pedagogical, and complete.

But it suggests another important point. Like produces like. Every instructor in a normal school and in all the higher institutions where teachers are trained ought to be clear and logical in thought. For teachers trained for any length of time by such instructors must acquire to some extent the habits of mind that will make them clear and logical in the presentation of the subject matter of a lesson when they in turn become instructors.

Definiteness in Presentation.—Presentation must be to the point. It must be definite, not indefinite; specific, not general. A good drill will penetrate steel, but, like good teaching, it must have both point and edge. Such teaching always goes to the vitalizing center of the thing that the child is to see, to think, to know. It disentangles that thing from everything else, and points it out definitely and distinctly. It clears away all irrelevant rubbish and helps the pupil to focus the concentrated energies of his intellect upon the one thing at issue. It brings the mind of the child not near the point under consideration, but to it. It turns the searchlight of his intellect not only into

the region, but to the very spot where the thing to be known is to become luminous and distinct.

Plan in Presentation.—Presentation must be loyal to a true aim and faithful to an orderly plan. Blind, haphazard presentation is as devoid of results as it is of skill. Aim must give it unity; and plan, order. The general without an aim and a plan for battle invites defeat. And the presentation without aim and plan invites failure.

But these are of little value unless the presentation, at every stage of the work, is true to the aim and loyal to the plan. Aim is the compass, plan is the chart. Follow them, and you accomplish at least a measure of success; desert them, and you drift idly with the current, inviting its tides to carry you away from, rather than to, the desired haven.

Two statements will sum up this matter:

(a) *Every good presentation has a true aim.*

(b) *Every good presentation follows an orderly plan.*

The exigencies of the case and the content of the subject matter determine the aim; logical and pedagogical judgment arranges the plan; and fidelity to aim and loyalty to plan acting through skillful presentation carry the work forward to the desired end.

The plan may be written or unwritten, definite or indefinite, logical or illogical, but every teacher, in justice to himself and to the child, should have, not only a plan, but the best plan he can make; because his own intellectual growth and that of the child are measured in any recitation by the execution of a logical plan.

Completeness and Unity in Presentation.—Presentation must be complete. Every lesson has its unity. It may be a subdivision of a subject, a paragraph, or a group of related paragraphs. But whatever it may include it has a unity more or less well defined. As such, the lesson has essential features and those that tend to elaborate

them. If there is sufficient time both the major and the minor thought of the subject matter may be brought out. But if the time is limited, the fundamental facts essential to the unity of the lesson should be presented even if some subordinate matter must be omitted.

This is evident, first, because the fundamental truths that constitute the unity of a lesson are of more worth than unimportant details; and, second, because they generally lie deeply hidden and are, therefore, more likely to evade the superficial efforts made in the preparation of a lesson.

Instruction moves forward by stages, steps, or lesson unities. And each, as far as possible, should be full and complete, not partial and fragmentary. It should include all its essential features and as much of their elaboration as the case demands and as time permits.

The habits of drifting in a recitation, of wasting time on unimportant details or irrelevant discussions, and of leaving the essential features of the lesson unity incomplete are as detrimental to the intellectual progress of the child as they are to the pedagogic growth of the teacher. The unity of a recitation is embodied in its beginning, its purpose, its plan, its essential features, and its end. And the wise teacher, with the idea of completeness in mind, *starts at the beginning, proceeds according to the plan, presents its essential parts, attains the end, and stops when he is through.*

2. THE INNER ACTIVITY

The external phase of presentation is important, but not more so than its inner activity. A block of wood will not serve as a camera, because there can be no inner response to external presentation. So the inner activity of the mind is just as essential in the act of

learning as the external presentation. This activity is generally the result of the presentation. They stand in relation of cause and effect. If the presentation is earnest and skillful, embodying the qualities just described, it will in all probability stimulate the mind to vigorous action.

Three characteristics of this inner phase of presentation are worthy of notice. Mental action must be *aroused, sustained, and directed*.

Stimulation of Mental Action.—Mental action must be aroused. Strength is the result of action. The muscle that remains inactive becomes weak and flabby, and actually loses to the point of paralysis the strength it has. So faculties that are dormant not only gain no strength, but in time actually grow weaker. The first effort of instruction is to arouse mental action. If it fails at this point, its failure is complete. Every external presentation, then, is worthless unless it stimulates mental action. For motion means life, growth, and strength, while stagnation is the forerunner of decay, and decay of death.

Mental Action Sustained.—Mental action must be sustained. The hare that made a spurt of speed and then lay down to rest lost the race. The tortoise that sustained a steady gait was in the end successful. The strong horse that pulls and balks at pleasure is unreliable. An inferior animal, whose efforts are sustained and regular, is far more desirable. So the mind should not be alert and dormant at intervals during the recitation. Its activity, rather, should be sustained and regular.

The aim of education is to develop a mind that can act steadily and regularly along any given line to which its energies may be directed. It thus becomes a ready, steady, reliable servant of the will. And such a mind is not the result of action that manifests itself in spurts and starts at sundry times and irregular intervals, but of that quality of action that is sustained and regular.

But what will enable the teacher to sustain mental action during a recitation? And what indicates the success of his efforts?

(a) *Continuous interest sustains mental action.*

(b) *Continuous attention is the evidence of it.*

The one is the cause, the other the effect. The physician knows the flow of the blood by the throb of the pulse. Attention is the pulse of mental action. And continuous attention is the external evidence of sustained mental action.

Mental Action Must be Directed.—For a thousand years the waters of Niagara rushed over the falls in awe-inspiring sublimity. They were uncontrolled, and laughed at the efforts of man to use them. To-day they are led out into channels through turbine wheels and thus are directed, harnessed, controlled, and whirl the wheels of industry with tireless activity. Fire and water, uncontrolled, are dangerous as elements and useless as motors; but harnessed, hitched, directed, controlled, and managed, they are man's best friends, bringing the dollars of the world to the doors of his home and lifting him above the level of human drudgery. So it is not enough to *arouse* and *sustain* mental action. It must be *directed* to a specific purpose, and *controlled* by a specific aim. It must be aroused, directed, and controlled in the line indicated by the aim and purpose of the recitation. And it must continue to act in this direction until the end is attained and the conclusion reached. And *the unity of aim in the teacher's mind, acting through the instrumentalities of the presentation, is the compass that guides and the hand that directs.*

Presentation is not all of the recitation. But it is a most important part of the teacher's work. It is through presentation that tact, insight, skill, personality, and power make themselves felt. It is by it that the teacher teaches, and through it that the pupil learns. For it the school was

organized, and from it the child draws much that the school gives.

TOPICAL OUTLINE

PRESENTATION

I.—ITS EXTERNAL CHARACTERISTICS.

1. It must be clear. This depends upon three conditions:
 - (a) The thing to be presented must be clearly perceived.
 - (b) The teacher's thought must be direct, distinct, adequate, and logical.
 - (c) The language of the presentation must be free from confusion of terms.
2. It must be strong. The elements of strength are:
 - (a) Clearness.
 - (b) Earnestness.
 - (c) Repetition. The number of repetitions depends upon:
 1. The degree of attention of the pupil.
 2. The quality of his mind.
 3. The nature of the subject matter.
3. It must be logical. This depends upon a logical perception of:
 - (a) The unity of the presentation.
 - (b) Its analytic parts and their relation.
4. It must be to the point.
5. It must be loyal to:
 - (a) A true aim.
 - (b) An orderly plan.
6. It must be complete.

II.—ITS INNER ACTIVITY.

1. Mental action must be aroused.
2. Mental action must be sustained.
 - (a) Continuous interest sustains mental action.
 - (b) Continuous attention is the evidence of it.
3. Mental action must be directed and controlled:
 - (a) By unity of aim.
 - (b) By the instrumentalities of the presentation.

CHAPTER IX

COMPARISON, THE THIRD FORMAL STEP

It may startle you to learn that the highest function of the mind is nothing higher than comparison.—SIR WILLIAM HAMILTON.

THE *third* formal step in the recitation is comparison. It might at first thought be called association, as this process is included in it as an important part. But while this is true, association is subordinate to, rather than co-ordinate with, comparison. And yet in this discussion it may be wise to separate them and treat them somewhat as coördinate elements.

COMPARISON

Comparison so dominates this step as to name it. The purpose of presentation is to stimulate and direct mental action. And the activity of first importance after presentation is comparison. It is a prominent factor both in the act of learning and that of teaching. It, therefore, has a *psychological* as well as a *practical side* and may be considered from each standpoint.

The Psychological Aspects of Comparison.—In presentation the inner activities examine the new material of knowledge and lay hold of it in the act of apprehension.

But the mind is not satisfied with mere apprehension. It demands more complete and intimate knowledge of the things apprehended. It, therefore, proceeds to examine them intimately, one by one, through the processes of analysis, comparison, abstraction, and generalization, in an effort to comprehend them. This is pre-eminently the stage of comprehension in the act of learning. But the comprehension of any subject or thing is the result

of the thinking faculties. You know a fact when you have comprehended it in its unity, its analytic parts and their relations, in its history and its application. And such knowledge is the result of vigorous and systematic thought.

There are three well-defined stages in the thinking process. The first is *conception*, the second *judgment*, and the third *reasoning*.

(a) The first begins with percepts, and by analysis, comparison, abstraction, and generalization works them into concepts. This is thinking in the first stage, in its most elementary form.

(b) The second stage begins with concepts, and by examination, comparison, discovery, and decision reaches a conclusion and states it in the form of a judgment. This, too, is thinking, but in a more advanced stage than the first.

(c) The third begins by examining and comparing two or more judgments, and by inference, or deduction, forms a third one, based upon or growing out of their relations. This is what is usually termed reasoning, or thought in its highest form. The fundamental factors, then, in the thinking process are conception, judgment, and reasoning. And these include analysis, comparison, association, abstraction, and generalization.

It is to be noted that *comparison* holds a most important place in the art of thinking. It is present in an elementary form even in conception. And in judgment and reasoning, the highest forms of thought, it is the dominant factor, the very pivot upon which thought turns. For judgment is practically a comparison of concepts, and reasoning is a comparison of judgments. Sir William Hamilton asserts that "The highest function of the mind is nothing higher than comparison." And since the learning process at this stage is pre-eminently a thinking process, it practically dominates the work in this formal step.

Much of the practical value of the teacher lies in his ability to suggest comparisons and to direct the mind in making them. He fixes firmly the standards of measurement, points out similarities or differences, shows the child how to estimate them, and guides his mind until a correct conclusion is reached. He keeps the mind alert reaching conclusions and stating them. This is the process ordinarily called judgment, and every judgment stated simply indicates the conclusion of an act of comparison.

In each act of comparison the child tries to comprehend the unknown by measuring, weighing, or judging it by the similar known thing. It holds the two concepts before the mind, looks from one to the other, compares them, discovers their resemblance or difference, and reaches a conclusion about them, and states it. To do this is *to think, to learn, to comprehend, to see the unknown through the known*. Judgment is the statement announcing that the unknown has been transformed into the known; but comparison is the process by which the mind discovers the former through the latter. In presentation the whole effort is to arouse, sustain, and direct mental action; and the mental action thus directed will, in all probability, be rewarded by discovering what it seeks.

Practical Aspects of Comparison.—The practical aspect of comparison may be included in two suggestions:

(a) *Furnish the mind with accurate and fixed standards of comparison.*

(b) *Train the mind to use them.*

Teaching, to a very great extent, consists in giving to the student fixed standards and in training him in their use.

(a) *Fixed standards of comparison.* It is difficult to measure if you have not a fixed unit by which to estimate the unknown. And it is just as difficult for a child to estimate a new thing by comparison without some known

standard of measurement. All science rests upon fixed standards of size and extent, form and motion. Science is classified knowledge. And classification is as impossible without comparison as comparison is, without the use of known standards. All intellectual attainment is estimated by fixed standards of knowledge, and all moral excellence by fixed principles of right and wrong.

How long is this line? The child who knows the number of feet in a yard and has a well-fixed notion of the length of a foot may answer with some degree of certainty. The accuracy of his judgment depends upon the accuracy of his fixed standards used as the basis of comparison. What is the color of this flower? The child cannot answer until he has referred it to his fixed notion of primary colors. The perception of the color of the flower as he attempts to answer will be decided by his knowledge of color concepts—that is, his fixed standards of colors. Is the thought of this composition expressed in good English? Before answering the critic compares it with the fixed known standards, established by style, syntax, and rhetoric. If these standards are sharp, clear, distinct, and accurate, his opinion will have some weight. For the value of his opinion depends upon the accuracy of his standards. Is alcohol a food? The student who has not fixed notions of what constitutes a food, and of the effects of alcohol, may give an opinion, but it will be worthless. Is this act right? Before answering the pupil must measure it by the fixed principles that separate right from wrong, or his opinion will not be worth the words that express it. Thus all sound judgment and substantial opinion are the results of acts of comparison in which the known fixed standard tries to measure and estimate the unknown.

How important, then, that the school give to the child fixed standards of comparison! In arithmetic he can make

little progress without the multiplication table and the tables of weights and measurements. A knowledge of factoring is essential to progress in algebra. A knowledge of the fixed terms, rules, definitions, and principles of any science lies at the very basis of its mastery by the student. Truth is the endless chain of cause and effect. Every cause has its effect, and every effect in turn becomes a cause. Cause, then, may be a standard of comparison by which to estimate effect, just as effect may be the standard to estimate the cause. But whether we go from cause to effect or from effect to cause, the standard—that is, the thing known—measures our progress and establishes the accuracy of our conclusions.

Accuracy of conclusion, clearness of thought, and soundness of judgment rest primarily upon comparison, and comparison turns upon the importance of fixed and accurate standards of knowledge. In the physical world science has established fixed standards of size, weight, form, color, taste, and odor, and of all the qualities of matter. In the intellectual world these standards are the tables, principles, terms, rules, definitions, and laws of science. In the moral world they are the principles of ethics and the rules of conduct. Science fixes these standards for the race, but the school must give their mastery to the child. A knowledge of them is the goal of instruction. The test of thinking is accuracy, and accuracy of conclusion is measured by the permanent standards of comparison; hence to give them is the first aim of the school.

(b) *Train the child in the use of these fixed standards.* The two desirable qualities of comparison are accuracy and facility. The former depends upon a knowledge of the fixed standards, the latter upon their use. Skill grows with practice. The child must use the multiplication table. He must use the tables in denominate numbers, even to the handling of actual weights and measures. The

sand box, the scales and the quart measure help to give both knowledge and facility. The child must be trained to use the rules of syntax, the principles of logic, the laws of science, the generalization of truth, and the standards of moral conduct. Truth must be kept in action, in motion, in use, or knowledge of it will rust.

Know and use. These are two of the shortest, yet perhaps two of the greatest admonitions of pedagogy. Know the fixed standards and use them and thought will be clear, judgment accurate, conclusions correct, and opinions respected. The cardinal defects in school work are due either to an ignorance of these standards or to the inability to use them. A pair of scales is serviceable only when one has the weights and knows how to use them. Comparison is the scales of the mind. And if the child would weigh the subject matter of a lesson with some degree of accuracy, he must have fixed standards of comparison and know how to use them.

ASSOCIATION

Association is the second element in the third formal step. It is a secondary factor, and yet it is important in its place. Comparison helps us to sort out and classify our experiences according to their similarities, or their differences, and to estimate the extent of either. Memory preserves these experiences, recollection recalls them, recognition identifies them; while association binds them into groups, or unites them into trains, so that when one idea is recalled it suggests the next, and then the next, until the whole group or train is brought into consciousness. Association, then, is the process by which one idea present in the mind suggests another.

This subject, like comparison, has two aspects—the psychological and the practical. The one shows the operation of the physical laws by which the suggestions are

made, the other shows how to consider ideas in the work of instruction in order to aid these laws.

The Psychological Aspect of Association.—Ideas present in the mind suggest related ones and those with which they were formerly associated. This is the general law. The important thing is to ascertain just how the mind acts in associating its experiences so that one will suggest another. Mental science has thrown much light on this subject and lifted it above the level of theoretical speculation. It shows that the mind acts in accordance with well-established laws in making its associations, so that one present in consciousness will suggest another. The most prominent of these laws may be designated as follows:

- (a) *The law of similarity.*
- (b) *The law of contrast.*
- (c) *The law of contiguity.*
- (d) *The law of correlation.*

(a) *The law of similarity.* Similar ideas suggest each other. This is a prominent law of association. If a friend relates some incident, you immediately think of one like it. Two story-tellers will occupy hours telling stories, each alternating with the other. One calls up another seemingly without effort. In speaking of great orators, if Webster is mentioned, Calhoun and Clay will immediately be suggested. In considering the death of McKinley, you are sure to think of that of Garfield and Lincoln. Think of the inventive genius of Edison in the field of electricity and it will suggest that of Marconi. If you read of Herbert Spencer's intellect as one of the most capacious of all time, you at once think of Bacon, Kant, or Aristotle. Thus an idea present in the mind suggests others like it.

(b) *The law of contrast.* Contrasted ideas suggest one another. This law is just as positive as the law of

similarity. In discussing temperature, the idea of extreme heat will suggest extreme cold. In the same manner war suggests peace; light, darkness; vice, virtue; and truth, error. In speaking of the rapidity and convenience of the modern express train, your mind will immediately call up the old stage coach with its lumbering gait and its lack of comforts. The wealth of the rich is far removed from the poverty of the poor, yet one drags the other into consciousness by the operation of this law. For contrasted ideas are so tied together that the consideration of the one without thinking of the other is difficult, or almost impossible.

(c) *The law of contiguity.* Ideas once closely associated in time or place suggest each other. Last year, as you drove through the country, at a certain place a rabbit ran across the road. The fact seemingly is forgotten; but this season as you approach the same spot, the incident and everything associated with it rushes into your mind. You are introduced to a gentleman at some time or place and under some peculiar circumstances. The place or time will suggest the circumstances, and the next time you meet the gentleman you will recall the former occasion and all things connected with it. This law is important and far-reaching. It gives to the mind a marvelous power to call forth its related ideas.

(d) *The law of correlation of ideas.* Ideas closely and mutually related suggest each other. Correlative terms are mutually suggestive. In language the word stands for the idea; you see one but think the other. Symbols suggest their signs. The term wife suggests husband; mother, daughter; cause, effect; the beginning, the end; the first, the last; and the subject the predicate. Ratio seems tied to proportion, antecedent to consequent, involution to evolution. This is the great law of association. All knowledge is related; and this law unites facts into trains

by relation, so that one fact in consciousness calls forth the nearest related one, and that fact calls forth another.

The Practical Aspect of Association.—In recalling its experiences the mind acts in accordance with these laws. They may, however, be either aided or retarded in their operation by the character of the teacher's work. The skillful teacher, understanding them and their far-reaching influences, will so associate ideas in the work of instruction as to help, rather than hinder, the mind in its efforts to recall. Ideas, like birds of a feather, flock together, and the teacher should use these laws of association as far as possible to encourage this flocking tendency. Skillful presentation, which is only another name for skillful teaching, swims with the current, not against it. It utilizes, rather than antagonizes, the laws of the mind. It recognizes them, uses them, prepares work for them, coöperates with them, and acts by and through them. Indeed, good teaching may be defined as the art of presenting truth according to these laws.

Growing out of these laws of association, and answering to them, are four practical suggestions that may be given for the guidance of the teachers:

(a) *The association of similar ideas in the work of instruction aids the mind in keeping and recalling its experiences.* The new idea should be compared to, and associated with, the similar known one. This is at once the best way to know the new thing and to aid the mind in recalling it.

This principle is especially in place in reviews, when the aim is not so much to impart fresh truth as to deepen impression and aid the mind in storing its ideas for future use. In such cases chronological order, and even cause and effect, so important in the work of instruction, may occasionally give place to similarity of topic. For example, it may be wise in history to review all the acquisitions of

territory, all the slavery struggles, all the monetary legislation, or all the tariff contests consecutively. Instead of studying consecutively chronological cross-sections of the current of history, as is ordinarily done, it is both wise and pedagogical to take a single idea and trace it from its origin in all its changes as it floats down the stream of time.

(b) *The association of contrasted ideas in the work of instruction aids the mind in recalling its experiences.* This rule is no less important than the preceding one although it may be more limited in its application. The new material in the lesson must be associated, not only with similar known matter, but also with that which is in sharp contrast.

In considering the virtue of one man the law of similarity would suggest corresponding virtues in another. But the law of contrast must not be disregarded. In associating the new with the old, vice must be contrasted with virtue, truth with falsehood, purity with corruption, generosity with selfishness, and strength with weakness. Bacon, called "the greatest, wisest, meanest of mankind," was a wise judge; but he was foolish enough to accept bribes. Rousseau was so interested in children that he told the world how to educate them, and yet he was so little interested in his own as to leave them to the tender solicitude of an asylum for foundlings. Marcus Aurelius, is one of the most lovable characters in all history, yet he persecuted the Christians. His "Meditations" embody much of the ethics of the Man of Galilee, yet he was only a pagan. Goldsmith's works are as full of wisdom as his acts are of folly. And Johnson, whose style is so stately and majestic, was himself uncouth and repulsive. Truth has its extremes, its contrasts, and its paradoxes. And the wise teacher, in the act of instruction, not only emphasizes similar ideas, but also those in contrast—the old with the new, and the new with the old. For, in teach-

ing, contrasts sharply drawn help to fix truth and to aid the mind in recalling it. And the teaching that calls up these contrasts works through two laws of association—the law of contrast and the law of contiguity.

(c) *Ideas considered at the same time in the work of instruction aid the mind in recalling them.* This is in harmony with the law of contiguity and needs no discussion. It is wise, however, for the teacher to seize upon, and bring together in the work of instruction, the essential principles, the vital elements of a subject, the old and the new, rather than to aid the mind in recalling knowledge not worth knowing.

(d) *Pointing out to the pupil the intimate and mutual relations of truth aids his mind in keeping and recalling the experiences thus united.* In history, geography, physiology—in fact, in every science—cause and effect bind whole subjects together, and the discovery of their mutual relations helps the mind to recall myriads of facts thus unified.

The language of instruction must be transparent. The child must see, not words, but ideas and their relations. The thing symbolized must be seen through its sign. Cause and effect must stand out as complementary parts of a great unity, the one acting and the other resulting. *Relations mutual, reciprocal, causal, and logical are the cardinal virtues of all real instruction.* It must point them out, hold them up, and hand them over to the grasping mind of the child. And the teacher who can do this not only teaches well, but also trains the mind to retain and recall these relations readily and accurately.

Comparison is the third formal step in the recitation, but it includes also association. Both are vital. The first is the foundation of the thinking process, the second is the key to representation. The one helps the mind to *know*, the other to *recall*. The one discovers relations, the

other binds them together into groups convenient for recalling. The one demands standards of comparison and the ability to use them, the other trains the mind to recall these standards when needed.

The first formal step prepares the mind for the reception of truth. The second presents it. And the third aids the mind in *knowing*, in *keeping*, and in *recalling* it.

TOPICAL OUTLINE

I.—COMPARISON.

1. The psychological aspects of comparison.
 - (a) Comparison as the basis of conception.
 - (b) Comparison as the basis of judgment.
 - (c) Comparison as the basis of reasoning.
2. The practical aspects of comparison.
 - (a) Fixed standards of comparison.
 - (b) Ability to use them.

II.—ASSOCIATION.

1. The psychological aspects of association.
 - (a) The law of similarity.
 - (b) The law of contrast.
 - (c) The law of contiguity.
 - (d) The law of correlation.
2. The practical aspects of association.
 - (a) The association of similar ideas in the work of instruction aids the mind in recalling its experiences.
 - (b) The association of contrasted ideas has a like effect.
 - (c) Ideas considered at the same time in instruction aid the mind in recalling them.
 - (d) Seeing the intimate relation of ideas aids the mind in recalling them.

CHAPTER X

GENERALIZATION, THE FOURTH FORMAL STEP

Generalization is the goal of instruction.—McMURRY.

WE have considered three formal steps in the recitation, and are now prepared to study the fourth, which is ordinarily designated as generalization. In the first stages of the learning process the mind examines individual facts, acquires an intimate knowledge of them, and then relates it with similar old knowledge according to the laws of association. In this formal step it advances to a higher plane and acquires general notions from an examination of individual cases. It passes over from the consideration of things concrete to the consideration of abstract qualities common to a class. It no longer contemplates things individual, because it has focused its energies on things general. In short, it has reached general truths through the examination of particular cases by the process called generalization.

An illustration will make this clear. One may examine the individual records of a number of business men, note that each is scrupulously honest, and that each seems to prosper in business. This knowledge is the result of the individual investigation made in the third formal step. The mind is now ready to generalize. It rejects every other fact in the records of the men except their honesty and prosperity, and proceeds to abstract these two qualities and to generalize by stating that "honesty is the best policy."

Generalization is of great importance. The preceding steps exist for it. To reach general truths and to apply

them is the true aim of all instruction. And teaching that falls short of this end is incomplete and unsatisfactory. Generalization tends to make truth universal in its application. It compresses knowledge into those convenient condensations in which the mind stores it and holds it for future use. It is the culmination of the thinking process and gives its highest finished product. Generalization forms the frame-work of science. Indeed, science may be defined as a system of related generalizations. The mind examines, acquires, and interprets with what it has. And since its possessions are largely in the form of generalizations they constitute the capital stock with which it works. They are the known standards that come forward into consciousness to examine, measure, weigh, and interpret the unknown, and thus transform it into the known, and to give it suitable classification among the mind's permanent possessions. Thus generalization renders a valuable service in aiding the mind to acquire, interpret, and organize new knowledge, and to condense it into consistent forms for practical use.

In the discussion of this step, attention is called to two important considerations:

1. Generalization gives rules, definitions, principles, laws and maxims.
2. Generalization comes after presentation and comparison.

1. THE BASIS OF RULES AND PRINCIPLES

Processes Precede Rules.—Generalization gives rules, definitions, principles, laws and maxims. "Processes precede rules," because the latter grow out of the former. A rule is simply a guiding summary of the salient features of a process. After preparation of the mind the process is presented. It is carefully observed and studied. After

similar examples have been studied, and the essential characteristics defined, the mind sees, grasps, and understands the process. It is then ready to summarize the essential features in the process, and to generalize and formulate its own rules by reducing them to a clear, terse, general guiding statement. The examination of the process shows the child what each step is, and why it is necessary. The rule is simply a sign-board, telling him how to proceed.

Definitions are reached in the same manner, for every definition is a generalization. The examination of things naturally precedes and leads to the definition of them. It is impossible to define a thing until you know what it is. *Examination, then, precedes definition.* For instance, a child that has examined a number of points of land piercing the water, and noted their fundamental characteristics, is ready to define a cape. Likewise, when he has examined a number of similar statements, and studied their essential elements, he is ready to generalize his knowledge and define a sentence. And when the mind has ascended from the perception of individual notions to the conception of the essential qualities of a class, it is ready to summarize them and formulate a definition. In other words, examination and study lead up to, and must, therefore, *precede, definition.*

The same is true of principles and laws. They stand side by side with rules and definitions. They, too, are the generalization of truth, the convenient condensation of knowledge, and the frame-work of science. A general could not command an army by directing individuals in the ranks. Control and direction are possible only through officers. Generalizations are the mind's regimental officers of knowledge. By them it organizes, classifies, controls, and marshals at will the myriads of facts in its vast army. And as the commander-in-chief creates and

commissions the officers needed to carry out his instructions, so generalization creates the rules, definitions, principles, and laws necessary to the proper organization of the mind's facts and forces. The head of the army must know his commanding officers, and as many of the privates as possible, but if the army is large he is scarcely expected to know all. So the man of culture may not be familiar with all the minor details of knowledge in its various ramifications, but he must at least know the generalizations of truth, which constitute the frame-work of all science. His knowledge is extensive in a general way, and intensive only in a limited field. He knows the general principles in many sciences, but is an expert master of details only within a limited range. Hamilton Mabie suggests that culture is always in quality and not in quantity of knowledge.

Generalization is the aim, but not the end of instruction. It is an essential port of entry, but not the end of the journey. Application is the final destination. But knowledge must be generalized before it can be conveniently applied. Effective instruction, then, must crystallize into generalizations. The mind must be able to recapitulate, summarize, and organize its knowledge. And the fourth formal step in the recitation should give that power. If the essential features of a subject have been presented clearly, tersely, and logically; if the new material has been thoroughly compared with the old, interpreted by it and associated with it, the pupil ought to be able to summarize and generalize the essentials into rules, definitions, principles, and laws.

When the arrow goes wide of its mark it may be due to imperfect aim, an imperfect arrow, or an imperfect bow. The cause may find its source in any part of the machinery of the work, but the result is the same. But whatever the cause, the arrow missed the mark, the shot was lost, and the effort failed. And the instruction that

does not lead the child to a comprehension of the terms, rules, laws, and principles of a subject fails as utterly as the arrow that goes wide of the mark.

2. THE ORDER OF THE STEPS

Generalization comes after presentation and comparison. This is an important fact. It is the finger-board that points aright at many a doubtful place in the journey; the light-house that guides the pedagogic mariner around many of the rocks and shoals of failure. Generalizations must follow, and not precede, individual notions in the work of instruction. They naturally spring from, and grow out of the examination of individual cases and hence cannot naturally or logically precede them. And as the process of instruction is from raw material to finished product, so the logical order in instruction is from individual notions to generalized statements. Generalization naturally comes after presentation and comparison because their work is essential to its success.

In practice two errors in this connection are frequently noticed.

(a) *The first is, in having the child begin the study of any subject or science with its generalizations—that is, with its rules, definitions, principles, and laws.*

(b) *The second is in confining the study of any subject or science to them.* Both of these errors are sometimes seen in the same school. Children are often permitted to begin and end the study of grammar with definitions and rules. They study nothing else, and know nothing more of the subject. Their English is like the frame-work of a house. It is strong and substantial as far as it goes, but it is not smooth and connected. The frame-work of a house and the generalizations of a science are both necessary; but the one does not make a house any more than the other makes a science. It is

needless to say that when the study of this important subject begins and ends with rules and definitions, the children have little power to use the mother tongue. Even in this day of skillful teaching it is not difficult to find schools in which the work in geography, history, physiology, and arithmetic, as well as in grammar, begins, proceeds, and ends with the study of these abstract generalizations.

In guarding against the *first error* three practical suggestions are helpful.

Let ideas always precede words. To the little child ideas arise through sense-perception, and words are then needed to represent them. After the child thus knows the color of an orange, he needs the word "yellow" to designate his idea. With little children the natural order is from ideas, or through ideas, to words. With more advanced pupils, who can use a dictionary, the order is sometimes reversed, the idea being derived from the word. But in the schools where ideas precede words there is little danger of beginning the study of a science or a subject with rules and definitions.

Let oral instruction precede text-book study. This is a practical application of the same law—*ideas before words*. The child that has not seen a creek or stream can have little idea of a river; while, on the other hand, a small hill visible from the school is sufficient material out of which the child may build his idea of a mountain. The visible is the eye-glass through which the invisible comes into imaginative view. The child must be trained to see the unseen through the seen, the past through the present, the remote through that which is at hand. In text-book work, ideas are often hidden from the child by words. The language of the text presents the unseen, the invisible, the remote. The vocabulary should therefore be within the comprehension of the child, if he is to grapple with the generalizations of the text.

Let percepts precede concepts. This is the psychological statement of the same law. We have seen that the development of knowledge and the progress of instruction is from the particular to the general—that is, from percepts to concepts. The simplest form of the thinking process is conception. And the aim of conception is to derive concepts from percepts.

How irrational, then, it is to reverse the process and ask the child to begin with general notions! Advanced students may have the power to begin with the products of thought, but in the elementary schools it is wise to follow the minds natural order—to go from ideas to words, from oral work to text-book study, from percepts to concepts, from particular notions to the higher forms of generalized truth. One of the ends of all instruction is to lead the child to comprehend the terms, rules, definitions, principles, and laws of a subject. And to begin the study of a science at the place where it should end is as unnatural, as unreasonable, and as absurd as it is unfair to the child.

The *second error* confines the study of a subject to its generalizations. This error is, perhaps, less frequent in occurrence than the first, but it is equally foolish in practice. And yet in some schools much of what is called instruction consists merely in asking the child to define terms, give rules, and state laws and principles. But the ability to repeat a law is not always evidence of a knowledge of it. "You do not know a thing until you have told it." This is an old maxim. But, paradoxical as it may seem, you can tell what you do not know. For the telling may spring from the memory and not from the understanding. The discussion, comprehension, and application of the principles are far more important than the ability to repeat them. Repetition lies on the surface

of instruction, but comprehension and application sound its greatest depths.

The child must know the generalizations of science. They are of paramount importance. We cannot do without them. And the instruction that falls short of this end is no better than the train that stops short of the traveller's destination. It is imperfect, unsatisfactory, and incomplete. But rules and definitions, important as they are, do not in themselves constitute a science any more than an outline forms a speech. A skeleton is not a man. It must be clothed with flesh and blood and throb with the subtle mysteries of life. You cannot make a great mind by feeding it on outlines, terms, definitions, laws, and principles any more than you can make a great soul by feeding it on moral maxims. To confine the study of a subject to its generalizations is to rob the child of the knowledge of the process that makes the generalization possible and of the application that makes it useful. The former prepares him to formulate his own rules, principles, and laws; the latter to apply them to advantage.

The student who knows the rules of arithmetic may be defective in process and practice. And he who has studied only the generalizations of grammar has missed much of the clearness of thought and the force of expression which the proper mastery of that subject should give. It is well to know the generalizations of science, but it is unwise to confine its study entirely to them. For to be able to derive the rules and principles of any subject, and to use them, is just as important as to know them.

Good teaching, then, avoids both of these errors. It does not begin with rules and definitions, but rather develops them from individual processes. Nor does it confine its efforts exclusively to the study of the abstract generalizations; for this is only part of the work, and

the whole is the sum of all its parts, and greater than any of them.

TOPICAL OUTLINE

- I.—Generalization gives rules, definitions, principles, and laws.
- II.—Generalization comes after presentation and comparison.

Errors

- (a) To begin the study of a subject with generalizations.
To avoid this error
 - 1. Let ideas always precede words.
 - 2. Let oral instruction precede the book study.
 - 3. Let percepts precede concepts.
- (b) To confine the study of a subject to its generalizations.

CHAPTER XI

APPLICATION, THE FIFTH FORMAL STEP

The school is as much a place for *applying* as for *accumulating* knowledge.—McMURRY.

WE have examined four of the formal steps—preparation, presentation, comparison, and generalization. We are now ready to consider the last, that of application, its social aspect.

The soul has three functions. It has capacity to know, to feel, and to will. Knowledge arouses feeling, feeling stimulates desire, and desire grows into purpose and through the will passes over into action. The knowledge of the needs of the race arouses feelings of helpfulness. These stimulate a desire to render some aid, and the desire grows into a purpose and a plan by which the end is to be reached. Application is the effort of the soul to execute its purpose in making knowledge productive and useful. It is knowledge acting as a means to an end. Generalization gives the mind rules, laws, and principles. Application is the effort to use them as instruments for service.

Under this subject two questions arise:

1. Is knowledge a possession or an instrument?
2. If an instrument, how may it be applied?

THE TWO VALUES OF KNOWLEDGE

Every generalization has two values, the cultural and the practical.

Values of Knowledge.—Knowledge prized as a possession gives culture, but knowledge used as an instrument gives power. The one makes the scholar, the other the

forceful executive; the one the idealist, the other the realist; the one produces the man of theory, the other the man of practice; the one suggests what may be done, the other executes what is possible.

These two types of men appear in every age and in every field of human endeavor. The doctrinaire studies, knows, dreams, speculates, and theorizes. The man of affairs studies, knows, plans, and executes. The one is a master in generalizing, the other a master in applying; the one dwells largely in the realm of abstract speculation, the other in the realm of utility. The world needs both of these types. Human progress is not the result of ignorance, nor of knowledge alone, but of knowledge applied, of thought in action, of intelligence executing its purposes.

Much of the scholarship of the world is found in the school of the doctrinaire. Aristotle, Kant, Bacon, Darwin, and Spencer are representatives. It includes many of the great scientists, the great philosophers, who think and dream and suggest, but seldom execute. In the other school is found some of the scholarship, much of the common sense and good judgment of the world—nearly all of its executive force. They know, think, plan, and execute. Their aim is not only to know, but to make knowledge practical, productive, and useful. In this class are found many of our great inventors, great generals, great statesmen, the great organizers, the army of skilled workmen, and the men of practical affairs. They test the suggestions of the doctrinaire and divide his philosophy into the visionary and the practical. In their ranks are found the engineers of the race and the wizards of human progress—the practical men who tunnel the mountains, wire the ocean, bridge the streams, and harness for man's use the very giants that once opposed him. But useful and numerous as this class is, it does not

render the other type unnecessary, for theory must precede practice and suggestion go in advance of action.

Applied knowledge helps to build character. Its aim is to be helpful and useful. When knowledge manifests itself in action, when it works and executes, each effort leaves a tendency to repeat itself. Action thus forms the basis of habit and the raw materials of character. For what the child does daily he will finally do as a matter of habit. And the daily acts and practices are the little rills of conduct that unite to form the great currents of character. Thus, the child that applies his knowledge becomes helpful and useful to society not only by what he does, but by what he is.

The application of knowledge is one of the weakest phases of our school work. We teach laws, rules, and principles, but we do not always give the ability to apply them. Children know the rules of grammar, but have but little power to use the language. They can diagram and parse, but they cannot compose. They know the terms of botany but not the plants in their own yard. They know the science of arithmetic but have little power in it as art. Geography is often a knowledge of textbook terms, but not of nature. The knowledge of physiology often has no effect upon habit. Thus, by divorcing knowledge and practice we make our school work weakest at its most important point, for knowledge passive is not power. It becomes power only when it becomes active, when it strives to execute some purpose, when it is applied to some end, and when it is wedded to intelligent practice. Education should result not only in scholarship and culture, but also in utility and service.

Applying Knowledge.—But what kind of instruction will make the child able to apply his knowledge and strengthen the school chain at its weakest link? We can ask the question, but we cannot positively answer it. One

or two suggestions, however, may be made that will at least point the way.

Instruction that emphasizes doing as well as knowing will give the child the ability to apply knowledge. In such instruction, testing and drill in application of new principles to new examples go hand in hand.

The tool chest of a carpenter has many tools. It is not a knowledge of these tools, however, but the ability to use them that makes a man a carpenter. Knowledge is an instrument. It is a good thing to possess it, a better thing to understand it, but it is still better to be able to use it. The test of an education is not what you know, but what you can do with what you know. We learn to do, not by doing alone, but by knowing and doing. And the instruction that requires the child *to use what he knows, to practice what he has learned*, will train him to apply knowledge with ease and force.

The military schools and naval academies are organized on this plan. They give the knowledge that will guide practice, but they give also the practice that will utilize knowledge. The same is true in the manual training school, the medical school, the trade schools, and the schools of applied science. These schools are organized to put the emphasis on application. In them practice keeps pace with theory, and the ability to do is prized as highly as knowledge itself.

Experimental work and laboratory work aid the child in applying knowledge. They emphasize the importance of application, of skill acquired through practice. And the rapid extension of laboratory methods in elementary schools is a commendable step toward making the school a place for *doing* as well as a place for *knowing*.

Instruction that is concrete and illustrative helps to train the child to apply his knowledge. The child that has studied the classification of clauses should illustrate

his knowledge with numerous examples. A boy learns to apply his knowledge of linear measure by measuring, and of weights by weighing things. A knowledge of how to write a composition is of little value unless the child can illustrate that knowledge in actual practice. In fact, illustrative work is as valuable in training the child to apply his knowledge as in clarifying and fixing thought.

Instruction that is complete and practical aids the child in applying his knowledge. Instruction, however skillful, is incomplete in the stage of presentation. Comparison gives more intimate and extended knowledge, but it is not the end. Percepts must be thought into concepts, and concepts into still higher forms, and thus reach the stage of generalization. This is the end of the inductive part of the process commenced in presentation but it is not the end of teaching. Instruction is still incomplete until these general truths are applied. By complete instruction we mean that which ends not in comparison or generalization, but in application. It includes not part of the five formal steps, but all of them.

Vocational training leads almost immediately to the application of the facts taught. Professional education in the domain of medicine, law, engineering, and other fields gives scientific knowledge and scientific principles, that are to be applied in actual practice after leaving school. But vocational education "stands on two legs." It includes class-room instruction, but the knowledge thus acquired is to be applied in some project within a few days. In this respect vocational education with its almost immediate application of the facts learned differs from professional education. The one is for the great leaders—the other, for the masses.

By practical instruction we mean that which requires the child to use and apply as far as possible what he knows, the instruction that touches the interests of the

community in which the pupil resides. The child has a practical knowledge of arithmetic when he can apply its principles to the solution of problems that spring from interests of the community outside the school. In a rural community his problems relate to farm business and farm products. Coal, iron, glass, steel, lumber, and general business outside the school must find a point of contact with the studies within it. His work in language, in arithmetic, in geography, in every branch, becomes not only real to him, and thus adds interest and meaning to school life, but it also makes instruction practical and useful, a thing to be used in the ordinary affairs of life. Everything without the school touches it and registers its influence upon the child, and the work within it should find a utilizing point of contact in the practical application of the life outside. The community and the school stand in reciprocal relations. Environment gives to the school its scope and its character, and school work gives its highest degree of practical completeness in its application to the problems of life around it.

The ultimate goal of practical instruction, then, is not comparison, not even generalization, important as it is, but application. The scholar, the recluse, the man of letters, who cares for nothing beyond culture, may be satisfied with generalizations. But not so with the practical man, the utilitarian, the man of affairs who prizes knowledge not alone as a possession that gives culture, but also as an instrument that may be used in the solutions of the great problems of the race. To him education is a ladder up which humanity climbs from primitive things to highest civilization.

The vital element in education is spirit. Personality is more potent than presentation; man is mightier than his method. The letter killeth, the spirit maketh alive. And no formal work should ever be permitted to sup-

press the spirit and the personality of the teacher. And yet the spirit and the personality alone in the school-room are like faith without works. Spirit must give life and influence to effort, and effort must be guided by the best intelligence and follow the lines of least resistance in the accomplishment of its best results. Instruction, then, must call to its aid the best means and all the means at its command.

These formal steps do not suppress the spirit. They add to its power. They cover the whole range of instruction. They sweep its entire field. They give the work purpose and point, edge and scope. They designate and direct its processes, measure and mark its progress, and generalize and apply its products. The function of each is important and fundamental. They are related and correlated, and yet scarcely co-ordinate elements in the process of teaching. Together they form a unity that is both pedagogical and psychological and in every way worthy of study.

TOPICAL OUTLINE

APPLICATION.

1.—Values of knowledge.

- (a) Knowledge as an end—culture.
- (b) Knowledge as a means to an end—utility.

2.—Application of knowledge.

- (a) Knowing and doing in instruction aids the child in applying knowledge.
- (b) Experimental and laboratory work aids the child in applying knowledge.
- (c) Instruction that is concrete and illustrative aids the child in applying knowledge.
- (d) Instruction that is complete and practical aids the child in applying knowledge.
- (e) Vocational education requires that the facts taught shall be applied in some project at once or within a few days.

CHAPTER XII

GENERAL METHOD IN THE RECITATION

No undertaking can be carried on successfully without method.—
FRANKLIN,

IN a former chapter we studied the subject of presentation as the second formal step in the recitation. We examined its external characteristics and the inner activities that ordinarily respond to, and result from, them. In this chapter we are to study the methods of presentation; to note their fundamental characteristics; to discover, if possible, their philosophy, and to see how they dominate the individual methods of the recitation.

I. METHOD DEFINED

The word "method" means manner. The purpose of presentation is to bring truth to the mind in such a way as to arouse and sustain its activities and to direct them to a specific end. And the method is simply the manner in which this is done. It is a way of reaching a desired end by a series of intermediate steps that lead to it, or by a series of acts that tend to produce it.

But method also means order. A method of teaching, then, is an orderly way of presenting truth to the mind and of directing its activities. And order primarily suggests system and plan. Hence a method of teaching is a sympathetic plan, involving a series of intermediate and orderly acts which point toward a desired end and tend to produce it. This systematic plan implies an aim or end, a knowledge of the means that will produce it, and a specific and progressive order in which each shall be considered, and how each shall be applied to the work

at hand. Method sees the end from the beginning, it knows the intermediate steps that lead to it, it determines the order and the manner in which each shall be taken, and thus rebukes all blind, haphazard, experimental effort, and removes as far as possible all guesswork from the class-room.

The goal of all instruction is knowledge, power, skill, application, or appreciation. The first is acquired, the second is the strength resulting from mental action, and the third is the facility that comes from practice. Knowledge is the fuel that feeds the engines of mental action, and power and skill are the results of this action. A method, then, is a way of presenting facts to the mind in order that it may acquire knowledge and arouse the activities that will result in the desired power or skill.

2. THE FUNDAMENTAL CHARACTERISTICS OF METHOD

The human mind has many powers, and a discussion of them would carry us beyond the limits of this address. Two of these powers, however, are fundamental. First, it can acquire knowledge; and second, it can reflect upon or think about its acquisitions. Its acquisitions come to it either through observation or through the medium of language, and reflection works them up into the highest forms of thought. Acquisition and thought are the basic powers of mind. All the knowledge the child can ever possess must come to him through the acquisition of truth or through its elaboration by the processes of thought, and the stock of his mental power and the extent of his skill are the results of them.

Around these two fundamental powers of the mind cluster all the knowledge and principles that tend to make teaching a fine art. These principles are the switch-

boards of method by which the teacher through presentation arouses, controls, and directs the currents of mental action. Perhaps it would be more appropriate to call them the key-boards of pedagogy on which the teacher must operate in arousing to harmonious vibration the strings that are within. And as familiarity with the key-board and skill in its use as well as a knowledge of the laws of harmony are essential qualifications of the expert musician, so familiarity with the key-boards of pedagogy, together with a knowledge of the laws of acquisition and thought, are the essential qualifications of the skillful teacher.

The subject of method has two phases, the theoretical and the practical. The one is a question of philosophy, the other, of practice. All practice ought to be sound theory applied. That is the shortest and surest way to success, for the art of teaching is simply the art of putting sound theory into effectual practice. The philosophy of method comes first, its application follows. The philosophy is difficult, but the ability to apply it is far more so. The former is a thing of the mind; it may be studied, explained, and understood. But the mastery of method is a thing of practice, and can be acquired only through the conscious or the unconscious application of the philosophy to actual class-room work.

Our study, then, of the fundamental characteristics of method must be largely theoretical. We can only survey the field of theory, examine its philosophy, and point out its principles, leaving the comprehension and the application of them to the teacher.

In the literature on this subject all methods are classified either as analytic or synthetic, inductive or deductive, objective or subjective, or empirical or rational.

Each of these four classifications is complete in itself, including the theoretical aspect of all methods. The different classifications arise simply from the different view-

points from which the subject is examined; and, considered practically, some of them will be found to be scarcely more than a different name for the same method.

Analytic and Synthetic Methods.—The terms analysis and synthesis are not very clear when applied to methods of instruction. In the literature of pedagogy they seem to have no definite or precise meaning. The clearest and most accurate thinkers fail to agree in their use of them, and Compayré suggests that since they bring nothing but confusion and obscurity, he would be glad to see them disappear from the vocabulary of pedagogy. But since they are used to designate certain methods, it will be necessary for us to examine them.

The mind learns by distinguishing one idea from another or by uniting one with another. Separation and combination are its fundamental powers. The one is termed analysis, the other synthesis. And any method dominated by the former process is called analytic, while one based upon the latter is synthetic.

No method, perhaps, is purely analytic or synthetic, but is rather a combination of both processes, the one complementing the work of the other. And yet one process may so dominate a method as to name it.

(a) *Analysis.* Analysis is one of the first efforts of the mind. As a rule, we first examine a thing as a whole and note its general characteristics. The thing examined may not be a unit in itself—it may be only a very small part of it—yet the mind examines it first as one complete whole.

But to gain a more intimate and exact knowledge it separates it into parts and makes each part a unit for examination and separation. And thus the mind proceeds to narrow the field of investigation in its endless quest for more minute and accurate knowledge, each part becoming in turn a unit for examination and study.

The first view of a house, for instance, reveals to the mind only its general form and appearance as an object. This first view is too vague to be of much service, and upon a more careful examination one discovers parts, doors, porches, and windows. These are in turn examined and their parts are noticed. Narrowing the field of investigation everything else is dismissed for the time, as the mind discovers the design, for instance, of an art window; and on and on the investigation may continue, narrowing the field of observation in an effort to gain more minute knowledge.

Analysis is thus a process of separation and of narrowing the field of investigation. It looks at a whole and recognizes that it is different from other things; it separates it into parts and distinguishes one from the other by recognizing that one is what the other is not.

(b) *Synthesis*. Synthesis is the process by which the mind unifies parts into wholes. It is a process of combination, not separation. It is, therefore, the very opposite of analysis. The one looks for differences by which parts are separated. The other looks for similarities by which facts are related, grouped, classified, and united. It puts facts with similar fact, element with element, and thus unitizes the mind's possessions. "We analyze," says Sir William Hamilton, "only that we may comprehend; and we comprehend only inasmuch as we are able to reconstruct in thought the complex effects which we have analyzed into their elements." And Baldwin suggests that the mind gains the mastery in two ways: "We divide to conquer, and unite to understand."

Analysis and synthesis, then, are complementary processes; either alone is incomplete, but together they form the whole circle of psychic action. "Each," as Sir William Hamilton remarks, "is the relative and correla-

tive of the other." And instead of being two separate processes they are rather the necessary parts of one.

(c) *The order in which the parts of a subject are studied.* But while the terms analytic and synthetic are vague when applied to methods, they are more definite when we use them to designate the processes of separating or uniting the elements of which anything is composed. And they are equally definite when used to name the order in which the parts of a thing may be examined. This order may be from the whole to its parts by analysis, or from the parts to the whole by synthesis.

When the study of a subject begins with a consideration of its unity and proceeds to a consideration of its parts the order is analytic. This is the logical order in which the matter in many of the sciences is arranged in the ordinary texts. It is to be distinguished from the chronological order in which the facts of history are generally studied.

For example, when the study of geography begins with the earth as a unit, separates it into land and water, divides the land into continents, the continents into countries, and the countries into states, the order is analytic. In like manner the analytic order of examining the facts of grammar begins with a consideration of the subject as the science of language, divides it into its principal subdivisions, and then takes up the study of each in turn.

The knowledge of a subject thus studied is of the highest value. No student is master of a science until he knows it in its unity, its analytic parts and their relations. But while this is true, the analytic order of study is not always the best to be followed in the elementary school.

When one starts with the consideration of a science in its unity, it will be necessary for the child to identify that unity; this is to know just what it is and how it is distinguished from other unities. That brings him face

to face with the definition of the subject to be studied. Now a definition is an exact statement of what are regarded as the constituent parts of the thing to be defined. And in the elementary grades where the child has no knowledge of the subject it is impossible for him to comprehend this definition of the thing or of its constituent parts.

Take, for example, the study of grammar from this analytic standpoint. In its unity it is the science of language and the art of using it. Usually it is divided into four parts—orthography, etymology, syntax, and prosody. It must be evident that the child who is beginning the study of language is not prepared to understand these terms and definitions. Indeed, three or four years of the study of the subject will scarcely make them clear to him. The same is true with reference to the study of geography, physiology, and arithmetic—in fact to any study.

It is obvious, then, that while this analytic order of study has an important place in the advanced grades of the elementary school, it is not the order by which a child should begin the study of a subject. To attempt to teach an abstract definition of the unity of a science to a child who knows nothing about it, is asking him to interpret the unknown with an empty mind. One might just as well expect a man to go into business without capital. An empty mind cannot acquire knowledge, it cannot even attend to its presentation. And it is impossible for a mind empty along a given line to grapple with and understand a definition setting forth the essence of the thing it would know.

The child must always start with something that is known. He must measure, weigh, and know the unknown by and through it. He must learn with what he has. There is no other way. Good teaching, as we have sug-

gested, always trains the child to use what he has in acquiring what he wants. It proceeds from the "known to the unknown." And it is folly to proceed by any other method.

The synthetic order of examining the parts of a science is generally preferable in the lower grade of the elementary school. It avoids asking the little child to begin the study of a science with its terms, definitions, and generalizations. It starts with some individual fact which the child knows, and which in some way relates to the thing to be known, and proceeds to enlarge his circle of knowledge on the subject and thus leads him up to the point where his expanding intellect can comprehend the subject in its unity, its analytic parts and their relations.

Induction and Deduction.—Analysis and synthesis seem to be the fundamental means by which the mind in the process of acquisition examines objective knowledge, while induction and deduction seem to belong more particularly to the methods by which the mind deals with subjective material in the processes of thought. They seem to be modes of thought by which the mind, through judgment and reasoning, elaborates its objective knowledge into higher finished forms.

(a) *Induction as a mode of thought.* Induction is the method of thought by which the mind reasons from the particular to the general. It examines individual cases, and through analogy affirms what is true of them is true of all in the same class, and thus proceeds from part to whole, from the particular to the general, and from the individual to the universal.

The reliability of inductive conclusions depends upon the number of individual cases examined and the analogy existing between them and the class of which the conclusion is affirmed. For example, a man who knows nothing whatever about corn, after husking a hundred

ears and finding each yellow, may through induction reach the general conclusion, "All corn is yellow." A more extended investigation of individual cases and of kinds would revise this conclusion by showing that some kinds are white, and that occasionally red specimens are found in each kind.

As a rule, hasty inductions are not very reliable. Caution and wisdom make haste slowly, but rash judgment jumps to conclusions. In order to give the inductive conclusion value, two things are necessary:

1. A large number of individual cases should be carefully and critically examined.

2. The individual cases examined must be similar and analogous, and each must belong to the general class of which the conclusion is to be affirmed.

Conclusions must rest upon facts, and general conclusions that are to be trustworthy must be based, not upon a few individual cases, but upon many.

(b) *Deduction as a mode of thought.* Deduct means to lead forth or to draw from. As a mode of thought it is the manner in which a general truth, already known or assumed, is lead out to a particular case by means of an intermediate term equally connected with both. Thus the general is brought down into the particular, affirming of the latter the qualities true of the former.

The syllogism is often employed in both these modes of thought. This consists of three propositions. The first and second are called premises, the third, a conclusion. The following syllogism will serve as an illustration:

1. All virtues are commendable.
2. Charity is a virtue; therefore,
3. Charity is commendable.

In this case the general truth already accepted or established is that "all virtues are commendable," and by

deduction this general truth is brought down and affirmed of charity because it is a virtue. This conclusion is based upon the fact that whatever is true of a class as a whole is also true of every individual in the class.

In the syllogism given above the first proposition is the major, the second the minor premise, and the third the conclusion.

The value of a deductive conclusion depends upon two conditions:

1. The major premise must be true.
2. The minor premise must be related to, or included in, the term or class designated by the major.

In ordinary reasoning, part of the syllogism is often suppressed and is only understood. For instance, one may say, "John cannot lift a man's load; he is only a child."

In this the conclusion is given first, the minor premise second, while the major is entirely omitted. If expressed in full the syllogism would be as follows:

1. A child cannot lift a man's load.
2. John is a child; therefore,
3. John cannot lift a man's load.

Another form is to say, "John cannot lift a man's load, because he is a child." This states the conclusion, and, with the first premise understood, assigns the second as the cause of the conclusion. This form is very important in teaching children. It couples the cause so directly with the conclusions that even the dullest mind is likely to see.

(c) *Inductive and deductive methods.* The process of thought that dominates a method names it.

The inductive method leads the child to apprehend the idea before it is given the word that stands for it; to understand the process by examining individual cases before the general rule is stated; to know the thing be-

fore it is defined; and to comprehend underlying principles before they are formally stated. It begins with individual cases and advances toward general rules and principles. It aims to have the child so understand individual cases and processes that he may derive the general rules and principles from them.

In arithmetic it begins with a concrete example, and by studying it leads the child to a discovery of its underlying principles and to a knowledge of the rule for the solution of all similar problems. It approaches the subject of elementary geography through the facts and the phenomena in the child's environment, advances by carefully investigating the processes of nature, and finally grasps the laws and generalizations to be used in the complete mastery of the subject. It makes the particular things that speak directly to the child the spectacles through which he is to see the general features of the subject.

In grammar the inductive method gives the learner the idea of the phrase, the clause, the sentence, the part of speech, in fact of any term or thing, before it asks him to define them. This method attacks all subjects in the primary grades through oral investigation of concrete cases, and in every grade through the examination of individual examples, processes and illustrations, and through them rises to the comprehension of rules and generalizations.

Deductive methods are those that start with a study of general principles and lead down and out to the consideration of these principles in their application to particular cases. They would derive ideas from words, solutions from rules, and a knowledge of the things defined through the definitions.

Deductive methods reverse the processes of induction. Generalization, including the rules, terms, laws, and prin-

ciples, is the goal of inductive instruction. In deductive instruction these are the beginnings, not the ends. To derive general truths is the dominating aim of inductive work. But deduction strives to verify or confirm them. Inductive methods examine individual cases and discover and state general laws and principles. While deductive methods examine general principles and strive to lead the child to understand, to verify, and to apply them.

From this discussion it is obvious that inductive and deductive methods are both to be employed. The former may predominate in one grade, the latter in another; but each must supplement and reinforce the work of the other, and frequently both are employed in the mastery of a single fact.

Inductive methods should predominate in the elementary school, for ideas should precede words, facts should go in advance of principles, and processes should always lead the way to rules in the training of little children.

Some parts of a subject are more easily presented by inductive methods than others. Much of the work in elementary geography, language, physiology, and arithmetic is very readily approached by them. But when the stage of generalization has been reached in the study of any fact or lesson, induction has largely accomplished its purpose, and should give place to deduction in the application of general principles to individual cases.

Objective and Subjective Methods.—In the study of methods the students frequently meet these terms, and while they do not take rank with induction or deduction, yet they hold an important place in the discussion of the subject.

Knowledge is of two kinds. The source of one is external, that of the other internal. One kind reaches the mind from the external world through the senses, the other

arises in the mind as the result of thought. The first may be termed objective, the second, subjective knowledge.

(a) *Objective methods.* The methods by which the mind examines things are objective. The child may study things or he may study about them. His knowledge of botany may be derived from the plants he has examined or from the books he has studied. The farm and the field, the stream and the slope, are sources of geographical knowledge just as truly as the book that tells of things beyond the pupil's environment. Hamilton says. "Objective means that which belongs to or proceeds from the object known, and not from the subject knowing, and thus denotes what is real in opposition to what is ideal, what exists in nature in contrast to what exists merely in the thought of the individual." Objective methods, then, are those that deal with things. They are the methods of observation, of sense-perception, that give us the raw materials of knowledge.

It is evident that objective methods occupy a most important place in the kindergarten and the elementary school. The numerous devices in which objects are employed to teach form, shape, number, and color all fall under this head. The sand-box, the school-yard, and the neighborhood are employed to give the child the fundamental facts of geography; the scissors in cutting paper into various shapes; the yard-stick in measuring length, and the scales in giving accurate notions of weight, all work more or less through objective methods. The fundamental idea in nature study is that nature shall testify directly to the child, and that his knowledge of the subject shall be acquired through objective methods. Indeed, the school that does not employ this method in giving to little children their elementary notions of things is out of harmony with the spirit of modern pedagogy. The

methods of instruction employed before the age of books were largely objective. They were primitive, but they were natural, and are likely to remain. They are the basis of every form and phase of the modern object lesson.

It is to be noted that objective methods are employed mainly in presenting objective knowledge. Their work is generally accomplished in presentation, the second formal step in the recitation. Comparison, generalization, and application, as formal steps, deal with knowledge after it has ceased to be objective.

Objective methods lend themselves with great facility in particular fields. In geography, physiology, and arithmetic they may be used to great advantage, and in the domains of chemistry, botany, physics, zoology, and geology they are especially helpful.

(b) *Subjective methods.* Subjective methods are those by which the mind elaborates the raw materials of knowledge, the products of sense-perception, into higher finished forms by the processes of thought. Objective methods are primarily methods of acquisition, while subjective methods are methods of thought. The product of the former are primary ideas and percepts; the products of the latter are concepts, conclusions, and generalizations. The processes of the one are observation and physical investigation; those of the other are conception, judgment and reason. Subjective methods deal with the things of thought in distinction from the things of sense. They relate to and sweep the realm of mind in contrast to the realm of things. They are the methods that accept and elaborate objective knowledge, after it has crossed the threshold of the mind and has thus become subjective.

These two methods, like those of induction and deduction, must supplement and reinforce each other. Objective methods give primary ideas of things. But the

mind cannot keep its possessions in the form of elementary notions. They must be worked up and generalized into terms, principles, and laws. These, rather than the crude, unrelated material, are the tools with which it works. Subjective methods, then, are necessary to complete the work which the mind undertakes in dealing with material things.

Empirical and Rational Methods.—Empirical and rational are practically other terms by which subjective and objective methods are designated. And yet it may be in place to speak of them separately.

(a) *Empirical methods.* Empirical methods are those through which we gain knowledge by observation and experience. They are the methods of the laboratory, the shop, the factory, and the field. Chemists, physicians, draughtsmen, mechanics, and artisans get much of their training through these methods. These are the methods of experiment, of observation, and of actual practice in contrast with those of inference and thought.

All such methods, however, must be guided by established principles and laws, or little progress will be made. A laboratory is of little value unless it is used right. Without access to the garnered truth of the race in the field of dentistry, it would take a young man a long time to acquire skill and efficiency by empirical methods. The attorney who practices law without a knowledge of its principles will not win many cases. The methods of the physician must necessarily be somewhat empirical, but if his practice is not guided by scientific knowledge it will take him a long time to rise above the level of quackery. So empirical methods to accomplish their purpose must not be idle and aimless, but founded upon and guided by well-established principles and laws.

(b) *Rational methods.* These methods relate to mind

in opposition to those that relate to matter. They belong to the realm of thought, not things, and are the methods by which the mind reasons in distinction to those by which it observes and examines material things.

The similarity in certain features of these fundamental characteristics of method is very marked. Empirical methods are those that depend upon observation and experiment. And objective methods deal with objects or things. But we know things by experience and observation. Hence empirical methods are practically objective. In like manner rational methods are practically subjective. These terms may not be identical throughout the realm of metaphysical thought, but within the scope of ordinary class-room work their differentiation is unnecessary.

In the same way empirical methods are generally inductive, and the fields of truth to which these methods apply with greatest facility are almost identical.

This similarity may be seen also between analysis and deduction and between synthesis and induction. Analysis passes from a consideration of the whole to a consideration of its parts. In deduction the mind passes in thought from the general to the particular. But the general often springs from the whole and the particular from its parts. And so this similarity may be traced between analysis and deduction and between synthesis and induction.

But analysis and synthesis seem to apply more particularly to methods of examination, of physical separation and combination, while deduction and induction are modes of thought. The former are the methods by which the mind examines the facts, investigates the conditions, and acquires the raw materials that are to be the basis of thought; the latter are the modes by which the mind moves forward by logical inference to the direct conclusions arising out of them.

TOPICAL OUTLINE

GENERAL METHOD

I.—METHOD DEFINED.

II.—FUNDAMENTAL CHARACTERISTICS OF METHOD.

1. Analytic or synthetic.
 - (a) Analysis.
 - (b) Synthesis.
 - (c) Order in which the parts of subject are studied.
2. Inductive or deductive.
 - (a) Induction as a mode of thought.
 1. Number of inductions.
 2. Character of inductions.
 - (b) Deduction as a mode of thought.
 1. The major premise must be true.
 2. The minor premise must be related to the major.
 - (c) Inductive and deductive methods.
3. Objective or subjective.
 - (a) Objective methods.
 - (b) Subjective methods.
4. Empirical or rational.
 - (a) Empirical methods.
 - (b) Rational methods.

CHAPTER XIII

INDIVIDUAL METHODS IN THE RECITATION

A good method favors self-teaching.—MARCEL.

HAVING studied the general principles or characteristics of method, it is our purpose now to examine the individual methods used in ordinary class-room work. We desire to see if possible what each particular method is, its contents and its limitations, and to inquire what are its peculiar advantages or disadvantages both to teacher and pupil.

1. THE LECTURE METHOD

This is a simple, direct, clear, strong, logical presentation of the subject matter of a lesson to a class in the form of a lecture. The aim is to do this in such a way as to keep the minds of the pupils moving from point to related point with sufficient rate to sustain the interest and hold the attention, and with sufficient force to fix the thought. The teacher thinks and presents; the pupils listen and think. They see and understand, follow the line of thought closely, and assent to, or dissent from, the conclusion.

This method is often supplemented with notes and outlines given by the teacher or taken by the pupils. The students are expected to review the lesson from these notes, and sometimes to reproduce the substance of it in oral or written form.

Advantage of this Method to the Teacher.

- (a) *It enables the teacher to teach a large class.*
- (b) *It makes the teacher clear, strong, and logical in thought and expression.*

(c) *It tends to add greatly to the learning of the teacher.*

University professors who use this method often become leaders in thought and scholastic attainment.

Advantage to Pupil.

(a) *It instructs the child.* We are told that "Telling is not teaching." This is true only when the information imparted falls upon a passive mind. Telling is not the best kind of teaching, yet, nevertheless, it may be regarded as teaching—a form of presentation when the information is received by an active mind. When fuel falls upon extinct fires it produces no heat; not so, however, if there is sufficient fire to ignite it. So telling is teaching when it stimulates thought—that is, when the inner activities respond to the external presentation.

(b) *This method helps to make the pupil who follows the teacher closely, assenting to, or dissenting from, his conclusions, clear, strong, and logical in thought.*

Disadvantages to the Teacher.

(a) *It gives little skill in the work of presentation aside from the ability to lecture.*

(b) *It seldom develops a teacher strong in class management.*

(c) *It fails to reveal to the teacher the pupil's grasp of the subject.* It gives the instructor no opportunity to measure and weigh the student's ability. As a means, therefore, testing his preparation, knowledge, power, or skill it is the poorest of all methods.

(d) *It gives to the teacher less knowledge of practical pedagogy and child study, possibly, than any other method.* This knowledge ordinarily comes to the teacher as he observes the inner response which the pupil makes to external presentation. This method, as already noted, may fail to arouse mental action, but when it does

stimulate thought it affords the teacher little opportunity to watch the movement of that thought and to measure and to weigh it. The thought of an individual is best measured by what he says and by what he does, and, as this method requires neither action nor speech on the part of the learner, it reveals almost nothing of his acts and habits of thought. Mental action is possible without speech; yet language is the great medium through which it manifests itself. This method thus reduces the art of teaching to a mere process for imparting knowledge.

Disadvantages to the Pupil.

(a) *It puts the pupil into a passive, receptive condition rather than an active, constructive attitude of mind.*

(b) *It tends to suppress the natural impulses of the child to speak and act.* This helps to defeat the whole purpose of the method by inducing mental inactivity. The fire that is not permitted to burn goes out, and the child that is not permitted to speak or act and thus give external evidence of his mental activity is likely to turn it aside to some more inviting field.

(c) *It does not test preparation and therefore may not encourage it.*

(d) *It tends to suppress the natural interest of the child, and as a result often fails to hold his attention.* To take no part in a recitation beyond that of listening to a lecture on the subject by the teacher is likely to quench, rather than fan, the fires of interest. The child who feels that he has nothing to do but listen, will, in all probability, soon regard that as unnecessary, and thus allow his mind to wander at pleasure; but active participation in the work arouses and sustains his interest and helps to fix his attention.

(e) *The lecture method is weak in its opportunities for practice through which skill and power are acquired.*

Knowledge, skill, and power are the objective points of every recitation. The first is the result of study or instruction; the second comes from drill; the third is developed by a vigorous exercise of the various powers of the mind and by the application of known principles to concrete cases.

(f) *This method is undemocratic.* It violates the principles of self-activity and social unity as emphasized in the socialized recitation. It thereby eliminates opportunity for that social coöperation on the part of the pupils which is the very basis of democracy.

It is evident that this is an excellent method of imparting knowledge. But when divorced from other methods, it affords little opportunity for the drill that gives skill, and for the training that results in power. It may give the child knowledge, but not the ability to use and apply it.

This method as such has no place in the elementary school. It belongs to the university, where the teacher is in possession of fresh knowledge on the subject not yet in print, or where the subject matter of the lesson has been gathered from sources too vast and varied for the student's research, or that lie beyond his reach. It may be used to advantage in the college, but in every case its use should be limited to advanced students who are impelled by an intense purpose to know and understand what is presented, and who have some power to verify and apply it.

But while this method is not to be used in the elementary school, the teacher is not to infer that it is wrong to impart knowledge by direct instruction. On the contrary, it is his duty to tell the class many things, but not the things that lie on or beneath the surface of the text. These should reveal themselves to the student in his study, or in the teaching part of the recitation, where the child

is so directed in his investigations that he is rewarded with the joy of discovery. But it is always in order for the teacher to throw additional light on the subject, especially such light as is needed by the child for a full comprehension of the subject, and yet is not of sufficient importance in itself to repay him for the time spent in the individual research needed in gathering it for himself.

The lecture method holds a most important place in the education of the masses outside the university and the college. It is the one employed by the pulpit and the platform. This is necessary, first, because no other method lends itself so readily to the instruction of large assemblies, and, second, because the subject matter of the lesson is not to be found in convenient form for the perusal of the people. But wherever used it must always fail with the individual unless it sustains his interest and holds his attention.

2. THE QUESTION METHOD

In this method the teacher asks questions about the subject matter and the pupils answer them. The teacher endeavors by skillful, orderly, systematic questions to present the salient features and the lesson facts of a subject clearly and logically and to have the pupils examine, discover, and understand them. These questions test preparation, rivet the attention of the learner upon the facts, and point out the relations to be known. If the child, guided by these questions, is not led to discover and understand that which the teacher would have him know, the teacher is expected by direct statement, suggestion, and illustration to throw such light upon it as will render it luminous. In a word, the child discovers and understands new facts, sees new relations, and reaches new conclusions, and thus masters a subject by reason of the

investigations he makes, guided by the questions and suggestions of a skillful teacher.

The questions may be so framed and directed as to develop the subject in a systematic and logical manner. Each question grows out of the knowledge previously mastered in such a way that, as the pupil masters the underlying principles, notes the current of causes and the tendency toward effects, his mind is forced by the logic of known conditions to discover the next step in the development of the subject. Guided by these questions, under the light of these conditions, the learner's mind, in its investigations, sweeps every part of the lesson field, and of necessity must discover the next logical link in the lesson chain. The mind of the child moves forward in its voyage of discovery, guided by these questions and illumined by the light of its own thought and by that of existing conditions.

This phase of the question method is sometimes called the development method. It is to be noted that this development refers only to thought, not to subject matter. You cannot draw out from the mind facts not in it, but you can make it think logically about the facts in its possession. If the pupil has not made definite preparation, and the teacher's questions are vague and general, this development is likely to degenerate into a mere guessing contest. But pointed questions guide the mind as it reviews in thought what it knows.

The Use of Question.—In class instruction the question has a variety of uses.

(a) *It may call for the contents of the child's memory.* Such questions are needed to test knowledge and preparation, but they are the lowest grade of pedagogical questions.

(b) *It may be used to awaken interest.* These are important in that they prepare the mind for what is to follow.

They raise it to the white heat of expectancy, the most opportune condition for effective presentation. They get the mental camera ready, as it were, for the flash-light of presentation.

(c) *It may direct the mind in its investigations.* The child has some related facts that will help him to grasp and interpret the thing he is trying to know. The question directs him to those known facts, calls them into consciousness, and helps to hold the known side by side with the unknown. It thus guides the mind in the process by which the unknown becomes the known.

The first of these classes of questions may be called *testing* questions. They call for what the child has, and the mental repetition occasioned by them helps to deepen impression and thus to fix knowledge more firmly in the mind. They call for the *contents* of the mind, however, rather than for its *exercise*, and train the child to *give* rather than to *get*.

The questions included in the second and third divisions serve a different purpose. They arouse the mind and get it ready to see, to grasp and to know. They direct its investigations and lead it to discover and to understand the thing hitherto unknown, and make it a part of the mind's equipment for future service. The purpose of these questions is to get the mind to examine and comprehend the unknown rather than to relate the known. They may be called *thought* questions. They demand a special product that must be produced by the processes of thought before it can be delivered. They train the pupil to *get* through these processes what he *would give*. They stimulate the thought that discovers new relations and reaches new conclusions, and that grasps, interprets, and assimilates the thing hitherto unknown.

In the use of the question method, then, great care must be exercised lest *testing questions* only are employed,

thus allowing the recitation to degenerate into a mere examination. The questions must do more than search the mind in quest of superficial information. They must *arouse* and *direct the thought* of the child, and demand a product, not of the *memory alone*, but also of *the mind*, one that the processes of thought must either *discover* or *make* before it can be *delivered*. Any method that tests preparation simply by asking for the contents of the mind, rather than for the exercise of it, is the method of a novice. It is only a part, and the least important part, of a legitimate method.

Advantages of this Method to the Teacher.

(a) *It enables him to test preparation, knowledge, power, and skill, and thus encourages study.*

(b) *It makes the teacher skillful in method and management.*

(c) *It reveals the contents and limitations of the child's mind*, the quality of its fibre, and the habits of its thought, thus giving to the teacher the knowledge needed in order to instruct and illustrate. It reveals also the level of the child's capabilities and indicates the work that will give the largest returns.

(d) *It affords ample opportunity for direct instruction, and for a systematic development of the subject.*

(e) *It lends itself with equal facility to every part of the recitation.* It is the main instrument in the test or examination, and in the drill; it also reveals just what should be taught, and actually calls up the similar known facts by which the unknown is to be understood and interpreted.

Advantages of this Method to the Pupil.

(a) *It tends to sustain the interest and hold the attention* by keeping slow minds moving and sleepy minds awake.

(b) *It affords ample opportunity to apply rules and principles* in the development of power and in the acquisition of skill.

(c) *It demands individual thought and expression.*

(d) *It trains in the art of study*, not only by testing preparation and demanding thoroughness, but also by the manner in which the investigations are directed.

(e) *If the teacher is logical and analytic in thought, it tends to develop similar power in the child.*

This method is well adapted to the work of the elementary school. It surpasses every other method in opportunity to test preparation, knowledge, power, and skill, to demand thoroughness, and to arouse, hold, and direct the thought of the learner.

As a general rule, the teacher should avoid the questions so often printed in the book, not because they are not good, but because he can, and generally does, use them without putting his own thought into them. This degrades both the teacher and his art, the one into a machine, the other into a mechanical process. Such questions are said to be like the bird-tracks made in the mud of former ages, now hardened into flinty rock. These tracks show where a living creature once stood, though they, themselves, are lifeless and formal.

These printed questions are very helpful to the child in trying to master a subject, but too often they rob the teacher of his vitalizing power and the teaching process of much of its skill. Thought calls for thought. The thinking teacher makes thinking pupils. And the teacher who, with a *definite purpose* in mind, thoroughly frames the best question he can, even though it is not the best that could be asked, does himself more good, and the pupil, too, than the one who mechanically repeats the questions framed by the author. Pupils should drink from

"a running stream, not a stagnant pool," as Arnold remarked, and they should dip up the life-giving water not with a rusty tin made when the book was printed, but with a bright new cup made for the occasion. A question hot with the burning thought of an active mind is generally more effective than one coined in the author's mould and left embalmed in lifeless form upon the printed page.

But there are some phases of this question method that teachers should note in order to avoid. Many questions may be asked that are irrelevant and therefore out of place. Others call for unimportant details, and still others may be poorly phrased and out of their logical order. Indeed, some teachers become so expert in the use of this method that they can question a class at great length upon a subject of which they have little knowledge themselves. Their questions are blind and unrelated. They have their pupils browse around in the field of the non-essential, picking up a stray, isolated fact here and there, without leading them to the vital issues that are to be grasped and understood. It is not the number of questions asked, but the character of them that marks the teacher's skill and power. Ordinarily much time is wasted by idle, irrelevant, empty questions.

3. THE SOCRATIC METHOD

This is sometimes called the question method. It resembles the developing part of this method, and yet it may be well to examine it individually.

It takes its name from Socrates, who originated and used it as he taught in the streets and marts of Athens.

Socrates, as one writer suggests, assumed (1) that the child was ignorant, (2) that truth to some extent is inherent in every soul, and (3) that the question was the

means of self-revelation, *i.e.*, the means of making conscious what was unconscious in the soul.

He was the first teacher to organize the art of questioning. He placed it upon a systematic basis. His aim was to stimulate the mind, to discover, and to verify, rather than to enlarge its store of knowledge by exposition.

This method as a rule avoids direct statement of fact on the part of the teacher, and strives by questions to lead the pupil to express an opinion on the subject under discussion. The teacher detects the truth or falsity of that opinion, but does not state it. By a series of questions the pupil is led to examine this opinion, to bring to bear upon it all the force of fact and reason at his command in an effort to discover whether it is true or false. This process continues until the learner discovers the absurdity or the validity of the statement, and is led to reaffirm or revise it as his conclusion demands.

It is well to note that statement is not always fact, that conclusions are not always correct, and that opinions are not always sound. Plato defined opinion "as something more dusky than knowledge and more luminous than ignorance." This method rejects statement until it is verified, and conclusion until it is weighed in the sound balances of logic and thought. It causes opinion to emerge from the dusky shadows, to step out from the haze and the mist into the full light of reason and judgment, and to take its place on the side of truth or on the side of error as its merits demand.

Fundamental Characteristics of this Method.

- (a) *It avoids direct instruction.*
- (b) *It leads the learner to make a statement about the subject under consideration, or it takes a statement already made or an opinion held by another.*
- (c) *It requires that the teacher shall DETECT the*

soundness or the absurdity of the statement or the opinion, but not ASSERT it.

(d) It causes the learner to examine that statement, to weigh that opinion, to test them by all the power of fact and reason at his command, and thereby discover their truth or their falsity.

(e) It concludes by leading the pupil to revise or re-affirm the statement, to reject or accept the opinion.

(f) It lends itself more readily to individual, than to class instruction.

The purpose of this method is not to impart knowledge, but to help the learner to see more clearly with what he has; to reveal latent truth through a better use of his mental equipment; to arouse it and bring it up into consciousness; and in the light of reason and judgment to require him to verify and confirm and finally to revise, reaffirm, or to annul his previously conceived opinions. This method assumes that it is better for the student to survey the field, examine the facts, and reach conclusions than to try to force them upon him. It would draw out rather than pour in.

The process of this method is pre-eminently a process of thought. Its steps are examination, investigation, comparison, and conclusion. Thinking, as generally analyzed, includes three stages, or processes—conception, judgment, and reasoning. And it is observed that while this method does not entirely avoid the first it employs mainly the second and third.

The instrument of the Socratic method is the question. All kinds of questions may be used that will aid in reaching the desired end, but two classes are important. First, those that convince of error, and second, those that reveal truth more clearly. The learner must be made to see the magnitude of his error and the extent of his folly by bringing him face to face with the conse-

quences of his absurd, illogical, and contradictory opinions. To convince him of his error is the first step toward a revision of his opinion. Until he sees his absurd opinion as others see it, he is usually unwilling to discard or revise it.

But to shatter the foundations of absurd opinion is not in itself sufficient. For absence of opinion in education is not the aim of true teaching. The questions that convince of error only clear the way for those that are to lay the foundation and to build up sound judgments that give clearness, content, and limitations to ideas that are struggling for birth in the mind of the child. These help to make vague truth definite, misty notions clear, and to bring out into the open sunlight of clear thinking that which before flitted in the maze and shadow of mental indistinctness. In all phases of interrogatory method there are different kinds of questions, but in the Socratic method the questions that convince of error, and that arouse latent truth, and bring to light half-hidden ideas are by far the most important.

Advantages of the Socratic Method to the Teacher.

(a) *It gives him keen insight and sound judgment in discriminating between truth and error.*

(b) *It makes him clear and strong in discussion.* With the resources and skill of a dialectician, he stands firmly entrenched behind the ramparts of fact, logic, and argument.

(c) *It develops the habit of selecting and following a controlling aim,* so often absent from the question method. He sees the end from the beginning and unifies and intensifies all his efforts in the attempt to reach it. It helps to develop the executive power of the mind as it strives to organize and direct the resources at its command toward a definite end.

Advantages of this Method to the Pupil.

(a) *It gives rapid mental development and great mental power, making the learner clear, strong, and logical in thought.*

(b) *It gives judicial mental poise as the result of a careful examination of all the facts.*

(c) *It gives positive convictions not easily set aside that tend to make the mind independent in thought, because this method puts the burden of observation, examination, and conclusion upon the learner.*

(d) *It gives to the pupil the joy of discovery and the calm confidence that springs from a consciousness of power.*

It is evident that this method cannot be applied to all kinds of school work. As a method of imparting knowledge it is helpless. It gives exercise, not nourishment, to the mind. Its province is to develop mental power with what the child has, not to convey to him additional facts.

It is one of the most difficult of methods. Only a master can use it. Indeed, it is so difficult that its exclusive use is seldom found. But it occupies an important place as a part of other methods in the presentation of certain subjects and the principles upon which they rest, and in exercises designed especially to develop the habit of independent thought.

4. THE TOPIC METHOD

In this method topics are assigned to individual pupils and they are asked to recite. They may respond through the medium of either oral or written expression.

Phases of This Method.—Three phases of this method are met in actual practice. The first may be called the *verbal phase*, the second the *thought phase*, and the third the *discussion phase*. In the first the child recites the

topic in the exact phraseology of the text; in the second he states the substance of it in his own words; while in the third he discusses it, pointing out how other authorities have treated it, noting the different views and opinions, and stating what he thinks of them.

(a) *The verbal phase.* The verbal phase of this method is of little value. It tests superficial preparation somewhat, but it requires mainly an act of the memory. It makes great verbal memories but not strong minds, for in it the mind recalls what it may or may not comprehend. This is the Chinese method. When found alone, divorced from question, suggestion, or illustration, it is the weakest and poorest of all the shams found in the class-room.

This phase of the method was once very prominent in the work in geography, history, physiology, and civics. These subjects are generally presented in the text by topics, and the first attempts of young students to study a lesson are always attempts to memorize it. But progress in the art of study and the art of teaching soon leads the pupil away from such empty efforts and lifts the teacher above such foolish methods.

(b) *The thought phase.* This phase rises in the scale of importance. It is far superior to the first. It calls for an act, not of the memory alone, but of the mind. To state the substance of what has filtered through the understanding, not only tests preparation and induces study, but also cultivates the power of sustained thought and expression. This phase may be used to great advantage in the upper grammar grade and in the high school. It lends itself with great facility in topic branches, but not until the learner has acquired some proficiency in the art of study.

(c) *The discussion phase.* This is still more difficult than the others. It exercises the mind in the higher realms of thought and gives a better result than either of the other

phases. But it can be used to a limited extent only, below the high school. To discuss a topic not only tests preparation and cultivates the habit of connected thought and expression, but also demands that the pupil shall make some research, that he shall examine, weigh, and verify what he finds, and then reach definite conclusions on the subject. And to do this develops, as it demands, a superior type of ability.

The discussion should be carried on in a broad, dignified, deliberate way in a sincere effort to pass judgment upon all and select the best, and at no time should it be permitted to degenerate into petty disputation.

The topic method is often supplemented by other methods. The class may be questioned about the topic recited, the teacher or some pupil may add by direct statement information not found in the text, and the whole turned into the vortex of class discussion. The lecture, the question, and topic methods are thus united and form a combined method embodying the strong point in each.

Advantages of the Topic Method to the Teacher.

(a) *In the verbal and thought phases of this method little is required of the teacher and little is gained by him.* As such it is the most barren of all methods in what it contributes to the teacher's power and skill. Its excessive use tends to develop a lazy, indifferent teacher who "hears the children say their lessons."

(b) *In the discussion phase it gives skill in class management,* and a masterly intellectual grasp of the subject taught, due to the extended research needed to guide the discussion, and to a knowledge of the varied standpoints from which authorities have treated it.

(c) *The thought and discussion phases of this method reveal to the teacher the pupil's knowledge, power, and skill and therefore indicate the point at which instruction*

and drill must be given and the level on which they must be pitched to accomplish their purpose.

(d) *The combination method makes a teacher expert in almost every phase of class work and class management, develops the power to use reference books and other authorities to advantage, and at the same time gives a broad and comprehensive knowledge of the subject.*

Advantages of the Topic Method to the Pupil.

(a) *The topic method operating through its verbal phase gives a strong verbal memory.*

(b) *The thought phase of this method not only gives a comprehensive knowledge of the subject, but it also develops continuity of thought and the power of connected expression. These may be regarded as the great contribution of the topic method.*

(c) *The discussion phase exceeds the thought phase of this method in the intellectual grasp of the subject and in the strength of mind and the power of expression it gives. It is also rich in the contribution it makes to the learner's ability to consult authorities, to weigh their statements, to accept or reject their opinions, to reach individual conclusions, and to set them forth in language that will both inform and convince. It gives to the student the very best habits and powers of study.*

Disadvantages of the Topic Method.—When this method is divorced from all others it has some elements of weakness in it. This is especially true when it avoids the last, and operates only through its first and second phases.

(a) *Under such conditions it affords no opportunity for the teacher to instruct. He simply "hears recitations."*

(b) *The recitation may deal only with superficial facts, and may, therefore, waste much time on non-essentials. Pupils taught by this method, unless they are well*

advanced in the art of study, are likely to gather and give only the general facts that lie on the surface, and thus overlook the vital issues and the fundamental principles that are beneath. The things worth knowing are often hard to find, and reveal themselves only to the persistent student in his study or through the skill of the instructor in the class-room.

In another part of this treatment of the recitation we have discussed the subject of presentation and pointed out some of its essential characteristics. It is to be noted that this method avoids presentation, except as it comes from the text; there is no place for actual instruction in it. The term "recite" is used in its literal sense, and the child simply tells what he has learned, either in his own words or in those of the text. The method in its second and third phases has its merits, but its disadvantages indicate the lack of wisdom in using it to the exclusion of all others.

TOPICAL OUTLINE

METHODS

I.—LECTURE METHOD.

1. Advantages to the teacher.

- (a) Enables him to teach a large class.
- (b) Makes him clear, strong, and logical in thought and expression.
- (c) Tends to make him scholarly.

2. Advantages to the pupil.

- (a) It instructs him.
- (b) It helps to make him clear and strong in thought.

3. Disadvantages to the teacher.

- (a) Gives little skill aside from the ability to lecture.
- (b) Gives little skill in class management.
- (c) Fails to reveal the pupil's grasp of the subject.
- (d) Gives little knowledge of pedagogy and child study.

4. Disadvantages to the pupil.

- (a) Renders his mind passive and receptive rather than active.

METHODS IN THE RECITATION

- (b) Suppresses natural impulse to speak and act.
- (c) Fails to test and encourage preparation.
- (d) Suppresses natural interest.
- (e) Gives no opportunity for drill.
- (f) It is undemocratic and antagonistic to the principles of the Socialized Recitation.

II.—QUESTION METHOD.

1. The use of questions.
 - (a) To call for facts.
 - (b) To awaken interest.
 - (c) To direct the mind in its investigation.
2. Advantages of the lecture method to the teacher.
 - (a) Enables him to test preparation.
 - (b) Makes him skillful in method and management.
 - (c) Affords him ample opportunity to instruct.
 - (d) May be used in every part of the recitation.
 - (e) Reveals the contents and limitations of the child's mind.
3. Advantages to the pupil.
 - (a) Sustains interest and holds attention.
 - (b) Gives ample opportunity for drill.
 - (c) Demands individual thought.
 - (d) Trains in the art of study.
 - (e) Develops analytic power.

III.—SOCRATIC METHOD.

1. Fundamental characteristics.
 - (a) It avoids direct instruction.
 - (b) It leads the learner to make a statement.
 - (c) The teacher detects the truth or the error in the statement, but does not announce it.
 - (d) It leads the learner to examine his statement and discover the truth or error of his statement.
 - (e) It leads the pupil to reaffirm or deny the truth of the statement.
2. Formal statement.
 - (a) It avoids direct instruction.
 - (b) It leads the child to make a statement or to express an opinion.
 - (c) It demands that the teacher shall detect but not express the truth or error of the statement.

- (d) It leads the learner to test or verify the opinion.
- (e) It concludes by having him reaffirm or revise his statement or opinion.
- 3. Advantages to teacher.
 - (a) It gives insight and judgment in detecting truth or error.
 - (b) It makes him clear and strong in argument.
 - (c) It develops the habit of selecting and following a controlling aim.
- 4. Advantages to pupil.
 - (a) It develops a mind strong and logical in thought.
 - (b) It gives the pupil judicial mental poise.
 - (c) It gives him positive convictions.
 - (d) It gives him the joy of discovery and the confidence that comes from tested strength.

IV.--TOPIC METHOD.

- 1. Phases of this method.
 - (a) Verbal phase.
 - (b) Thought phase.
 - (c) Discussion phase.
- 2. Advantages to the teacher.
 - (a) Verbal phase makes him indifferent and lazy.
 - (b) The discussion phase gives skill in management and a great intellectual grasp of subject.
 - (c) The thought and discussion phases reveal the pupil's needs and capacity.
 - (d) The combination method gives skill in class instruction and class management.
- 3. Advantages to the pupil.
 - (a) Verbal phase gives verbal memory.
 - (b) Thought phase gives continuity of thought and expression.
 - (c) Discussion phase gives masterly grasp of the subject and ability to study.
- 4. Disadvantages of the topic method.
 - (a) It affords no opportunity to instruct.
 - (b) It may deal only with the superficial facts.

CHAPTER XIV

ORAL AND WRITTEN WORK IN THE RECITATION

The living word is the most powerful agent of instruction.—
ROSENKRANZ.

ALL language is either spoken or written. And it is evident that every method used in the recitation employs one or both of these forms of expression. Some use the oral, others the written, and frequently one may use both.

The lecture method in imparting knowledge ordinarily uses the medium of spoken language, yet it often demands of the student a written statement of the substance of the lesson. The question, and the Socratic, methods generally operate through oral expression, but they, too, may employ written language to reproduce what was taught, while the topic and project method employ both forms with equal facility.

I. THE ORAL PHASE OF RECITATION WORK

In the primary grades the language employed in the recitation must be largely oral. This is necessarily true until the child can read script and write with sufficient facility to take part in a written recitation. He must be taught to know through the eye what he knows through the ear, and to express with the hand what he can express with the tongue before written work can be used to any extent in the class-room.

But not only in the primary, but in every grade of the elementary school, the oral recitation is the greatest

medium for instruction at the teacher's command. Its advantages over the written, may be designated as follows:

It is the most natural and convenient instrument of instruction. The written method may be used to examine and train, but as a medium for practical instruction it is very inconvenient and cumbersome. It is preëminently a method for testing and training, but not for teaching, while oral methods afford the most ample and convenient opportunities to instruct.

The oral recitation surpasses all others in its power to arouse the interest and sustain the attention of the pupils. The oral question or suggestion is a challenge to wavering attention. Either may be so directed to the listless pupil as to stir his interest and demand his attention.

The oral recitation is the great medium through which the personality of the teacher makes itself potent. Personality is a mighty and mysterious power by which one man is distinguished from another. It is the individuality of a soul externalizing and impressing itself upon others. The avenues through which a great soul influences others are the eye, the voice, the appearance, and the manner of the individual. Each is important; but since the power of language is always reinforced by the glance of the eye and the attitude and action of the individual, the voice is one of the greatest channels through which the currents of a teacher's influence, from the sources within, sweep outward to impress children. Perhaps no other method offers personality such a favorable opportunity.

Few teachers know the real value of oral work in the elementary school. This is particularly true in the department of language. The child will speak a thousand words for every one he will write; his language in life will be almost exclusively oral, and yet we ask him to write, write, write, instead of training him to speak.

The relative value of oral and written lessons in language has never been clearly determined, and many teachers seem to think they are not teaching the subject unless the child is writing something. Thus, much of the oral work that is needed to prepare him for written language is neglected, and his instruction in this department is built upon a flimsy foundation.

What is true of language is true also of elementary arithmetic. The oral drill intended to give the child skill is greatly neglected. Many teachers give no oral work in class. They fail to see that much of the time, possibly three-fourths of it, spent in written class work in elementary arithmetic, is devoted to the mechanical rather than to the mathematical part of the work. Mathematical skill is the result of mental, not of mechanical, exercise. And the twenty-minute period given to written class work in elementary arithmetic may not keep the child's mind engaged mathematically more than one-fourth of that time. Some written work, indeed much of it, is necessary in giving the power to apply the fundamental operations to the solution of problems, but in giving skill—that is, the ability to calculate accurately and rapidly—the oral drill far surpasses the written exercise, because so much more can be accomplished by it in the same period of time.

2. WRITTEN WORK

But, notwithstanding the importance of oral instruction, there is a prominent place in every school for written work. The field is limited in the primary, but it is somewhat enlarged in the grammar grade, and greatly enlarged in the high school. In every grade above the lowest primary there is some work of such a character that it demands written expression. Some things must be reduced to writing on board or paper for the critical examination and inspection of pupils and teacher. Written tests, re-

views, and re-statements are very helpful and valuable in measuring the efficiency, not only of the child's knowledge, power, and skill, but also of the oral methods by which he was taught. To be able to write clearly and accurately the substance of what was presented by the teacher is the best evidence of the efficiency of his efforts.

Kinds of Written Work.—Written work in the school may be considered under three heads :

Ordinary written work, special written work, and written class work.

(a) *Ordinary written work.* This is the written work done in the seat in the preparation of the lesson. It is often self-imposed by the pupil as an aid in study, and is not to be examined or inspected by the teacher. Its whole aim is to prepare the pupil for the recitation.

In advanced classes written preparation is very desirable. The fact that a master mind seeks the aid of the pencil in its attempt to master a lesson is indicative of that intense desire to know and understand which lies at the base of all true study. Because of this, written preparation imposed by the teacher is often less valuable than that which is voluntary.

Since this work is not to be marked by the teacher the full measure of its value lies in the contributions it makes to the child in the act of preparation. These contributions are chiefly concentration of mind, clearness and fulness of comprehension, and exactness in expression. And as this work is generally self-imposed it tends also to give self-reliance and self-control.

But however valuable this work is in the advanced grades, there are some forms of it in the primary schools that waste much time and give very little in return that is of educative value. One of these is found in the senseless habit imposed by some teachers which requires the child to copy a reading lesson on slate or paper in the vague hope

that it will prepare him to read it. This plan is in general practice in some localities. It requires much time and patient effort on the part of the child, and yet beyond what it contributes to habits of industry has little to recommend it.

Writing a lesson does very little toward preparing the child to read it. By actual test second-grade pupils were found to be able to copy accurately a dozen difficult lines from "Paradise Lost," and after three reproductions of them in writing could neither read them nor spell the important words. A similar test showed that they could copy sentences composed of difficult words taken from the dictionary, and yet after three reproductions could not read or punctuate the sentences or spell the words.

A test made with a paragraph from another reader of corresponding grade showed that little children may copy what they ought to be able to read without the slightest mental effort to read or to try to know what they had written. Mere copying may be a mechanical process that does not require the child to exercise his mind in thought upon the thing copied. It may be a thing of the hand mainly and not of the mind.

Silent reading is getting thought through printed symbols; oral reading is giving expression to it by the voice; and it is a delusion to think that the mechanical copying of the lesson is of much value to the child in either of these processes. Persons who copy deeds, bonds, and other written instruments seldom know the substance of what they have reproduced. Their entire mental effort is directed toward making an exact copy. So the mind of the child in writing a paragraph from the text may be directed toward exact reproduction and not toward thought-getting.

Again, some teachers think that copying the text trains the child to spell the words and to capitalize and punctuate the paragraphs. This, too, may be a mistake. The purpose

the mind has in view in any effort it makes determines the value of that effort. If the child copies some work in an effort to learn how to spell the words and to punctuate and capitalize the paragraph, some good will come from it. But the teacher cannot keep this purpose before a class in copying a reading lesson. He may ask them to do the work with this end in view, but that will not keep it present. Regardless of instructions the controlling aim at least in small children must degenerate into a mere mechanical reproduction.

Proof-readers can spell, capitalize, and punctuate because that is the controlling purpose of their work. But copyists, who are charged with making an exact copy, seldom have much ability as proof-readers.

A child is taught to capitalize and punctuate first by giving him a knowledge of the use of marks and letters and then requiring him to apply that knowledge to concrete examples. Inspection directed by the teacher is also valuable, but mere copying may give little return. In learning to punctuate, the hand does what the mind suggests. In copying the hand reproduces what the eye sees, and there can be no assurance that the mind dwells in thought upon the work. If the mind in transcribing a paragraph is practically inactive in thought and suggests nothing, the work is carried on as a mere mechanical process. Such exercises are valuable in keeping the child employed, but they are almost valueless in what they contribute to mental growth.

There is another form of written preparation that deserves some attention. In some schools children are required to write spelling lessons and lists of misspelled words in the hope that such repetition will train them to spell. It may or it may not. Repetition is certainly an element of strength in teaching, and in another chapter we have discussed its merits and pointed out as far as possible the principles that determine the number of repe-

titions necessary. But it is mental rather than physical repetitions that are valuable in learning to spell. It is the mind, not the hand, that is the agent in the effort to learn. If the mind dwells upon the spelling of the word, the effort is valuable; if not, it is wasted.

To copy a list of words is certainly not conclusive evidence that the mind has consciously examined and studied each. And it is the conscious not the mechanical effort that trains it. If the mind notices carefully the spelling of a word, it will not be necessary to write it often, and if the writing is unconscious and mechanical, the repetition is of little value. One may occasionally find a word written correctly four or five times and then an error appears that is repeated as often as the word is written.

In copying either a reading or a spelling lesson the mind of the little child seldom examines a word as a whole. This is especially true with reference to long words. The eye catches a group of letters, not necessarily a syllable, and the hand reproduces it; another group is seen and reproduced. Thus the work proceeds by adding detached, fragmentary, and unrelated parts. And since the mind seldom notices the word as a whole or by syllables, or dwells upon the idea it represents, the exercise may be of little value either in training the child to spell or to get thought from the printed page. Indeed, the whole process of copying in the elementary school should be regarded more as a mechanical than as a mental effort. It is devoid generally of all purpose and conscious effort beyond mere reproduction and is therefore generally devoid of value.

(b) *Special written work.* This work is prepared for some specific purpose and is to be submitted to the teacher for examination and inspection.

It has a legitimate field in the grammar grade and the high school, but it must be used with judgment and moderation. If the child can copy the work, it is almost

useless; but if it requires originality of thought and expression, it is both desirable and valuable.

This work is done either in or out of school, but not in class. It may include the analysis of sentences, the making of outlines not found in the book, the writing of topics, the drawing of maps, and, if the work is so guarded that no help may be gotten, it may also include problems in arithmetic and algebra and work in geometry. It includes also the writing of compositions and the reviews of subjects previously studied. This may be done out of school. But to lift composition above compilation, and to make a written review most valuable in thought and expression, the work should be done in the school-room under the eye of the teacher.

1. This work is all to be examined. That was part of the purpose in preparing it. It has a double value to the child; that derived from its preparation, and that which springs from its correction. At the same time it reveals to the teacher the knowledge, power, and skill of the child and thus enables him to give the exact instruction needed and to grade it to the level where it will do the most good.

When and how to mark this work is a problem as difficult, as perplexing. It must not only be marked, but to accomplish the full measure of its purpose the child must be brought face to face with his errors. This may be done by taking a period for discussing them. In reading the papers some teachers keep a scratch-book, marking in it the errors of individual pupils. This scratch-book furnishes the points for that discussion and enables the teacher to bring the correction of an error home to the pupil who made it.

If conditions require it, two or even more periods for discussing errors should be taken. For to omit this part of the work is to fail to teach just what the class needs, and this failure tends to rob the written exercise of much

of its value. Reading the papers simply reveals the errors, but the period for discussion and instruction aims to remove the tendency to make them. If this is not done the same error may appear in a pupil's work month after month. But "Error, assailed, reels and staggers like a drunken man," and, after numerous assaults, will reel out of sight and appear no more.

This special written work includes also the monthly, quarterly, and final examinations. In conducting these it is an excellent plan to prepare the questions on separate slips suitably numbered. Each pupil is given a slip with one question on it. When he has answered it he brings his answer to the teacher at the desk and receives another slip. The teacher gives him credit for his answer, and thus the work proceeds. This plan has two advantages. It allows the teacher to read and mark the work during the examination and thus saves many an hour outside of school. At the same time it guards against the opportunities to "borrow information" by having the pupils in adjacent seats answer different questions at the same time. For the correction of errors found in this work use the scratch-book and the subsequent period for the special instruction, or call each pupil to the desk as the examination proceeds and show him the error in the work just handed in.

2. There is another plan for correcting compositions and all phases of written work that is very helpful to the pupils. This plan uses a system of symbols known to every pupil. They stand for errors in fact, in syntax, in punctuation, in orthography, in capitalization. The system includes some mark that will indicate all the kinds of errors made in ordinary composition. In reading the papers the teacher simply runs the pencil through the error or underscores it, and marks on the margin opposite the symbol that indicates the class to which the error

belongs. The papers are then handed back to the pupils for their inspection. They discover the mistakes, correct what they can of them, and rewrite either the whole paper or the sentences in which the errors are found. The teacher examines the corrections made by the pupil and notes in the book of errors all such points as are necessary to be reviewed at some future time.

This method requires more time and care than many teachers are willing to give to this work, but it is the shortest route to accuracy on the part of the child. This plan has the following advantages:

a) *It puts the responsibility of discovering the errors upon the child.* The symbol indicates where the error is to be found and the class to which it belongs, but the pupil must discover it.

b) *It puts the burden of correction upon the child.* He must consult the dictionary, the grammar, or the text for the knowledge that will aid him in making the corrections.

c) *It develops the power of critical examination and judgment and the power of self-help.*

d) *It brings the child face to face with his own weakness and lifts him above it by leading him to strengthen his powers at their weakest points.*

(c) *Written work in the recitation.* This form of written work includes every kind done in the class under the direction of a teacher. Its purpose is to have the pupils recite, partly at least, through the medium of written language in such a way as will be most helpful to them.

Ordinarily it is a reproduction of the substance of what the child has studied in the preparation of the lesson under consideration or in the reproduction of something formerly studied. It also embraces written words, sentences, problems which reveal the child's ability in spelling, language, and mathematics. It may include les-

sons in writing, drawing, map-drawing, diagramming, outlining—in short, any kind of class work intended to appeal to the eye of the teacher and the pupils.

This form of written work may employ either paper or blackboard, and is generally used in teaching mathematics, language, spelling, and composition. It may be used with equal facility in teaching geography, history, civics, and physiology by the topic method, or in reproducing the substance of what was taught by any method.

This work is only a means to an end, and to attain that end it must be inspected and discussed. Without critical inspection it will scarcely call forth the interest of the child to be pitched on the highest plane of his best effort.

If the work is on the blackboard the whole class may inspect it critically under the direction of the teacher. The pupils, as far as possible, should be held responsible for the corrections.

In explaining problems, demonstrating theorems, analyzing sentences, or reading any kind of written work, the aim is to have all the pupils follow in thought, assenting to, or dissenting from, conclusions. This is a phase of presentation in which one pupil teaches others, and as such it should be clear, strong, logical, and to the point. And like all presentation, it fails in its purpose if it does not stimulate and direct the thought of those who are expected to learn. The open eye fixed on the work following closely the pointer in the hand of him who explains, and the alert ear catching every word uttered, are the best evidences that the purpose of the presentation is being realized. Pupils may look and listen and yet not follow in thought, but ordinarily the mind is aroused and led through eye and ear.

If the work is on paper, it may be read by the individual who wrote it, the class and the teacher noting such errors as appeal to the ear. Or papers may be exchanged and marked. Even when most pupils use paper, it is wise

to have a few write on the blackboard in order to have some work prepared for typical correction and discussion by the class.

Advantages of Written Work.—Written work carefully planned, wisely directed, and critically inspected has many advantages.

(a) *It economizes time.* Its method is simultaneous, yet individual rather than consecutive. Many may write at once, but only one may speak.

The great defect of the oral recitation in practice is waste of time. Theoretically all are expected to be attentive, and to think with or after the one reciting. But in practice many mark time while one marches on.

(b) *Written work gives clearness and cogency to thought and conciseness, exactness, and coherency to expression.* And these qualities give tenacity and accuracy to memory.

The mind sits in judgment upon what is written, and thus logically and forcibly pushes the leading thought forward into the next sentence. "Writing makes an exact man," said Bacon, and when rightly employed it makes the pupil clear and strong in thought, and concise, forceful, and exact in statement.

(c) *Written work trains in the art of study.* It reveals to the mind what has been mastered. By written work, outlines, diagrams, and examples the mind sees exactly what it knows, and discovers the point at which its energies must be concentrated in order to make the unknown known. Study is the self-directed effort to learn. It implies a knowledge of the point to which the effort must be directed. Written work not only reveals this point, but in the effort to discover the leading thought that is to be projected into the next sentence, it actually trains the mind to know; that is, to study.

Roark summarizes the advantages of a written recitation over the oral as follows:

"It gives drill in rapid writing, making the pupil use penmanship only as an instrument.

"Writing a recitation accustoms the pupil to spell by eye.

"Through a written recitation each pupil may be tested upon the whole lesson.

"Writing a recitation affords a training in one of the most valuable forms of expression."

But in many schools there is too much written work. The use of a good thing has been turned into an abuse. The amount of work to be corrected in some school makes teaching a sort of slavery, and drains the teacher's vitality almost to the point of exhaustion.

As a rule, there is too much written work in the primary schools. Three-fourths of the day is often given to it. An ideal system of education would not require much writing from the child during the first two years of his school life. It would devote little time to the preparation of lessons during that period, and spend much of it in oral lessons and drills, followed by brief intervals for rest and play. Without asking him to write much, it would afford ample opportunity for the training of eye and hand.

At present we not only ask the child to do what in some respects is unreasonable when viewed from the physiological standpoint, but we keep him doing it the greater part of the school day. He must write copies, problems, words, stories, and lessons as if writing were the only avenue to mental growth.

This is due to some extent to the emphasis that has been placed upon "busy work" in the modern elementary school. The term itself is absurd, as it implies that there are some kinds of *idle* work. Many teachers have come to regard "busy work" as written work. Indeed, the "busy work" papers and manuals have encouraged this by inventing and announcing new kinds of it in the numerous

devices which call for some form of written work. The child is thus enslaved in a formal bondage that is not only repulsive, but that actually retards his mental development. It is not surprising, in the light of such conditions, that one writer calls "busy work" "the fertile friend of superficiality and the deadly enemy of all genuinely valuable mental culture."

TOPICAL OUTLINE

ORAL AND WRITTEN WORK IN THE RECITATION

I.—ORAL WORK IN THE RECITATION.

1. As an instrument of instruction.
2. As an instrument to arouse interest and sustain attention.
3. As a medium through which personality speaks.

II.—WRITTEN WORK IN THE RECITATION.

1. Kinds of written work.

(a) Ordinary written work.

(b) Special written work to be corrected.

1. The use of the scratch-book in marking and the period for discussing errors.

2. The use of a system of symbols in designating and correcting errors.

a) This plan puts the responsibility of discovering the exact error upon the pupil.

b) It puts the burden of correcting the error upon the pupil.

c) It develops the power of critical examination and of self-help.

d) It strengthens the pupil at his weakest points.

(c) Written class-work.

2. Advantages of written work.

(a) Saves time.

(b) Gives clearness to thought and exactness to expression.

(c) It trains in the art of study.

(d) Dr. Roark quoted on the advantages of written work.

CHAPTER XV

PLACE AND TACTICS OF THE RECITATION

Order and system are nobler things than power.—RUSKIN.

EVERY recitation is either a victory or a defeat in the general campaign the teacher is carrying on against the ignorance or the lack of power in some particular subject. To succeed in the campaign is far more important than to win an individual victory, and yet success is made up of the individual victories just as failure is made up of defeats. And as the wise general sweeps the field with a scrutinizing eye to discover the lines of least resistance and the avenues of easy conquest, so the practical teacher will try to discover and utilize in the class-room the conditions that help to make individual victory easy and final success more certain.

These conditions may be regarded as helpful rather than fundamental. They are not absolutely essential to victory, yet they aid greatly in securing it, and tend to make defeats more infrequent and failure less liable. These conditions may be discussed under the following heads:

1. The place of the recitation.
2. The tactics of the recitation.
3. Methods of calling upon individual pupils.

I. THE PLACE OF THE RECITATION

The place of the recitation seems of little importance, and is, therefore, often dismissed without much thought. While it is not vital, it is at least worthy of notice.

In actual practice two plans prevail:

1. The group or class plan.
2. The scattered or seat plan.

The first groups the pupils into a class in some part of the room, usually at the front. This is the plan that is generally used in rural schools. It prevails also in some graded schools.

The second conducts the recitation with the pupils occupying their individual seats, except as each may be called upon to rise and recite. This plan is usually found in graded schools where the divisions are so large that it is difficult to find space for the class in some other part of the room. In some schools the pupils of a class occupy seats on one side of the room, in others they are scattered throughout it. Thus the space occupied by a class during a recitation may be all of the room, or that part of it occupied by a division while at work, or a still smaller section in some part of it.

The Principle of Class Grouping.—What, then, shall be the dominating principle that will help the teacher to decide which of these three places shall be selected? We offer the following: *The smaller the space occupied by the teacher and the class the greater the influence of the instruction*, provided that the space is large enough to guarantee health and comfort to each.

If this principle is true, then the recitation in which the pupils are seated in part of a room is preferable to the one in which they are seated, promiscuously, throughout it. And the one that groups them into a small, compact body is preferable to either of the others. It has many advantages.

(a) *It is favorable to class management.* It brings every pupil within the influence of the teacher's eye, and enables him to note the attitude and the actions of each pupil with the least possible effort.

The knowledge that "Thou God seest me" is the greatest restraining moral influence that affects human conduct. So the eye of the teacher is one of the great restraining influences of the school. Most of the troubles

in school arise when the pupils are beyond the range of the teacher's eye. Good police regulations in a city are great restraining influences upon evil-doers. And the controlling and restraining influence of a teacher's eye is like the presence of a vigilant officer to a man bent on mischief. The class grouped into a small area is much easier managed.

The personality of the teacher is the strongest influence in class management. But it is difficult to project personality thirty feet through mid-air to those reciting in the back seats. And personality, like a stream from a hose, is stronger when concentrated at close range than when scattered and spread throughout a room.

(b) *It is favorable to class interests and sympathy, and therefore conducive to class attention.* Interest and sympathy are like heat. They warm all who are within reach, but they warm most those who are close to the center from which the radiation comes.

A small stove will warm a dozen persons if they gather around it. But the same number with the same stove will actually suffer from cold if scattered over a large hall. Five pupils will make a class, but they should be grouped into a small area with the teacher. The fires of interest will die out and the warm currents of sympathy freeze if the pupils are scattered throughout a large auditorium. Interest and sympathy are contagious, but only within certain limits. The strength of light decreases as the square of the distance increases. We do not know the exact law that governs interest and sympathy, but we do know that it is similar.

The court takes advantage of this principle by putting the jury in the jury-box, not only to safeguard the jurors from outside influences, but also that they may be in a close, compact body near the court, the witness, and the lawyers by whom the case is to be presented. And the

jury-box plan applied to the pupils in a recitation is always favorable to class interest, sympathy, and attention. A shot at a flock of partridges when they are scattered is not very effective; the same shot may accomplish tenfold as much if the flock is bunched into a small space.

(c) The group plan frees the class from those seat objects and incidents that tend to lead the mind away from the point at issue.

Instruction without attention is impossible. Attention is the closing up of the mind to all things save the one under consideration. When pupils occupy their individual desks during a recitation, books, papers, slates, and pencils should be removed. Nothing should be left in sight that will compete with the lesson for the interest of the pupil, and thus side-track it and switch his attention to something irrelevant. Even when all the objects are removed, there are still so many things visible to the pupils scattered here and there over a room, that the problem of instruction is rendered difficult because of the distracting influences that dissipate the interest and destroy the attention. The grouping of the class into a small area reduces these distracting and detracting influences to a minimum.

The management, interest, attention, and instruction of the pupils, as well as the personality of the teacher, all demand that class area be made as small as possible, consistent with the health and comfort of the pupils.

There may be some difficulties in the way, but many of them can be overcome. A large class of small children learning to read may be massed in a straight line or a semi-circle, two or three rows deep, and all close to the chart or blackboard to be used. If the pupils use books or papers in the recitation, the protection of the eye demands that their faces be turned away from the windows so the light will fall on the book from behind. The pupils in a large class in a graded school may be grouped into a compact

body in the front seats on one side of a room. Indeed, the conditions that involve difficulties are many, but they yield in most cases to the teacher who recognizes that an important principle which helps to safeguard class instruction is at stake.

2. TACTICS OF THE RECITATION

The tactics of the recitation is a system of signals and commands for the movement of pupils to and from class in a quiet, orderly manner, and for the regulation and direction of class work. Pupils are moved and work is directed in every school. The movement of a large number of pupils must be directed as a unit, or confusion, disorder, and waste of time are sure to follow. School regulations of some kind are therefore both desirable and necessary.

The code should be simple, definite, direct, easily understood, yet withal systematic. Such a code has many advantages. It saves time, avoids confusion, promotes order, stimulates interest, imparts vigor, cultivates promptness, encourages obedience, strengthens the power of attention, and helps to lay the foundation of habits of system and order.

Children have a natural impulse toward free, spontaneous, and self-directed action. But they have also an impulse toward rhythm in sound and motion, as seen in their songs, rhymes, and amusements. This impulse toward uniformity of sound and motion plays an important part in the self-directed games of children. They love system and order, and naturally tend toward it. Nothing interests and pleases them more than a calisthenic drill or a motion song. This natural love and tendency, reinforced by the equally natural imitative powers of the child, makes the mastery of a code of school tactics both easy and pleasant. And this mastery tends to strengthen

their respect and admiration for the teacher. For as soldiers naturally admire the military tactician who can form, move, and mass his men with skill and precision, so children respect the ability of the teacher who can move and manage a school with system and order.

The code of signals and commands should be uniform. The movements should be simple and necessary rather than artificial or ornamental. All commands should be short, direct, and easily understood, and the response to them prompt and decided. The will must act before the body can conform to the command. Hence such a system demands and cultivates alertness of mind, decisiveness of will, and promptness of action. It is a great source of discipline to the child, both mental and moral. It cultivates respect for law, adds positiveness to the temperament, gives decision of character, develops the virtue of obedience, and trains the habit of attention. And if sufficient time is allowed for the execution of each command, and prompt obedience is required, these results may be secured, time economized, and confusion avoided.

Code for Calling or Dismissing Classes.—In calling classes the following signals or commands may be used: (*a*) ready, (*b*) rise, (*c*) march, (*d*) sit.

When the system is understood by the pupils the numerals, one, two, three, and four may be substituted if desired.

(*a*) *Ready*. At this command the pupils lay aside their work, take up the book or paper needed in the recitation, and assume a position ready for the next signal. If this is done promptly a moment of intense interest and silence follows, as all, in wide-awake expectancy and attention, await the next command.

(*b*) *Rise*. At this command all rise and face in the direction they are to move. Another moment of absolute silence follows as all attentively await the next signal.

(c) *March*. At this command every pupil steps out, quietly but firmly, with the left foot. If the children are very small, greater relaxation of mind and muscle is secured by having them skip or run rather than march. And it is surprising that this may be done with little more confusion than marching.

By either plan they pass to the place of recitation either at the board or in the seats. If the pupils are to stand, no further command is necessary. If, however, they are to occupy seats they will await, in silence, till the signal is given.

(d) *Sit*. At this command all are quietly seated and, in the attitude of attention and alertness of mind, hold themselves ready to begin the work.

Code for Class Work.—In directing a class in black-board work, the following may be used: (a) turn, (b) erase, (c) write, (d) face, (e) explain.

(a) *Turn*. The pupils must face the board, and at this command they promptly and quietly do so.

(b) *Erase*. At this command the board is prepared for work. Pupils may number off by threes, fours, or fives, so that no two, side by side, may have the same work. After their numbers or names are written upon the board they face the teacher.

(c) *Write*. At this command the persons to whom work is assigned turn and write the necessary conditions on the board. All others maintain their position until work is assigned.

(d) *Face*. The teacher may want to impart some general instruction, point out some error, give some special drill, or root the attention of the class in thought upon some specific point. The time for closing the work or for some explanation may have arrived. So, at this command, all stop work and quietly, but promptly, face the teacher.

(e) *Explain.* In case some part or phase of the process involved is to be examined critically, the teacher may call upon some one to explain. Instantly all face the work and fix the mind on it. The pupil with pointer in hand proceeds; to encourage attention the work of explanation may be suddenly stopped, and another pupil asked to continue the explanation.

As the purpose of all school government is the self-government of the pupils, so the aim of all school regulations is the self-direction of the individual. The freedom and self-control of the individual, however, must be in accord with the rights of others and the ethics of school management. And when these ends are attained it will not be necessary to follow the code rigidly. For as good school government gradually eliminates this necessity for its exercise, so your school regulations tend to produce the ideal conditions that render their use more and more unnecessary. And while some simple directions for the movement of classes will always be needed, the necessity for adhering to a systematic code will gradually be removed.

Code for the Use of Pupils.—Thus far our code of tactics provides only for commands that issue from the teacher. But the pupil, as well as the teacher, has the power of initiative within certain limits, and consequently a system of tactics must provide signals through which he may express his willingness to take part, assent to, or dissent from any conclusions. This willingness is generally expressed through a movement of the hand. Many movements might be suggested, but for all practical purposes the raising and the lowering of the hand are all that seem necessary.

(a) *Raising the hand.* Good pedagogy demands that all questions shall be directed to the class and that every

member be held responsible for the answer. Raising the hand may indicate:

1. A willingness to answer.

2. A desire to correct, add to, or dissent from the answer given.

(b) *Lowering the hand.* The hand is lowered:

1. When a pupil has been designated to recite.

2. When the answer given is satisfactory.

The hand when raised should be kept still. Patience is a virtue. So is eagerness, but it should not become boisterous. Pupils should not be permitted to speak or to raise hands until the pupil reciting has ceased. The mind will be benefited by holding the criticism or suggestion till the proper time.

Snapping of fingers and gesticulating with the arms should not be tolerated. Pupils who do not voluntarily indicate a willingness to take part must be called upon. Unwillingness to participate in the recitation may be due to timidity or to lack of preparation, but in either case it must not be disregarded by the teacher.

Physical culture demands that all pupils should be required to sit and stand erect, and to execute all bodily movements with grace and precision. When any one is speaking in the recitation the interests of courtesy and progress demand that all others observe absolute silence. Looking and listening are the attitudes of attention, and no teacher should try to teach or ask a pupil to recite without demanding them. We are aware that attention cannot be commanded or demanded, but its external attitude can. And it is the duty of the teacher to require it, for it is difficult for the pupil to assume and keep this external attitude for any length of time without giving also that fixedness of mind that is the very essence of attention.

3. METHODS OF DIRECTING QUESTIONS TO THE CLASS

As a rule teachers ask and pupils answer questions. It is not improper, however, when prompted by the right motive, to reverse the order. Occasionally, too, pupils may be permitted to question each other. In the socialized recitation pupils aid in analyzing the project, in assigning problems to certain groups and in verifying their reports or those of the individual members.

It is evident in the matter of asking questions that two avenues are open to teachers or to pupils in the socialized recitation. They may either direct the question to the individual who is to answer it or they may direct it to the class in general. The first may be called the *individual*, and the second the *general*, method.

Individual Method.—This plan names the individual and then asks him a question; or it may ask the individual to rise, and then direct a series of questions to him.

This is an ideal plan when there is but one pupil in the class. But it is not conducive to interest and attention in larger classes. When a pupil is named before the question is directed to him, the other pupils are likely to conclude that the question and the answer are individual matters, and therefore give little attention to either. The same is true when he is asked to rise and answer a series of questions. It is safe to conclude, then, that while this method is good for the individual who is answering, it is not the best suited to class instruction. And yet some teachers with advanced pupils can so use it as to overcome these disadvantages.

The General Method.—By this method the teacher or the pupil states the question in a general way to the entire class, and then calls upon some individual to answer.

While the teacher or the pupil is asking the question each child naturally assumes that he may be the individual

designated to answer it. This demands alertness of mind from all, and, if the answer is short, each may respond to it mentally before the pupil is named who is to frame his answer in oral language.

And the pupil who answers mentally, and is ready and eager to respond orally, is benefited only in a degree slightly less than the one who actually recites.

This method holds each pupil responsible for the question and for its answer. The teacher with a class of ten pupils who can make ten minds answer the question, nine of them silently, is much better than the one who can make but one respond to it. It is evident, then, that this plan, under ordinary circumstances, is preferable to the other. For class progress depends not so much upon the *individual who recites orally* as upon *what each member thinks* while one is speaking. Perhaps there is no better sign of a teacher's incompetency than to see ten pupils marking time in a recitation while one who is reciting marches forward.

4. METHODS OF CALLING FOR ANSWERS

No discussion is needed to show that there are two and only two methods of calling for answers. Either the individual or the class as a whole is asked to answer. This gives us:

1. The individual method.

2. The concert method.

The Individual Method.—By this method the individual rises and calmly and deliberately tries to frame the best answer to the question he can. He strives to make the answer clear, concise, and definite, and from that effort comes strength of mind, clearness of thought, and accuracy and definiteness of expression.

The same results come, though perhaps in a less degree, to every member of the class who critically follows the thought and expression of the individual answering.

(a) *The order of calling upon the individuals may be consecutive or promiscuous.* The former asks the pupils to recite in consecutive order as they stand or sit in class.

1. It saves time.

2. *It distributes work evenly and none are omitted.* But it is generally destructive to class interest and attention.

3. *It may not demand general preparation, as pupils may prepare only what they expect to recite.*

(b) *The promiscuous method calls upon an individual here and there to recite, as the teacher may desire or as conditions may suggest :*

1. It helps to sustain interest and hold attention by requiring all to be ready at any moment.

2. It affords the teacher the opportunity to ask the question needed by the individual and to gauge it to his particular requirements. But it requires more time than the consecutive method, and may not distribute the work as equitably.

The Concert Method.—By this method all the members of the class, or as many as desire, answer the question simultaneously. If the answer is short and definite, all may give it in a few words, otherwise the concert answer is noisy, boisterous, and confusing.

This method has little to recommend it, and yet it may be used to advantage in certain kinds of work. Take, for example, word-recognition in a primary class involving spelling and pronunciation. All may look at the word for a moment silently, try to make it out, and then pronounce it in concert. Or, if further examples are needed, notice its usefulness in oral number drill in any of the fundamental operations; six, plus four, less three, are how many? If the problem is presented at a rate suited to the mental grasp of the class, each pupil makes the calculation silently, and at a signal from the teacher all answer in con-

cert. It is evident that these drills may be so timed that only the quick minds may be ready to answer. This helps and encourages the few to the disadvantage of the many. But they may be timed for the many, too, and the quick minds required to keep back the answer until the slower ones are ready. This method is not to be recommended generally, and yet there are many occasions when the skillful teacher can use it to advantage.

(a) *Among the limited advantages of this method the following may be stated:*

1. It encourages the timid pupil to take part.
2. It helps in a formal way to train memory.
3. It helps to arouse enthusiasm.
4. It aids the bright pupils who lead in the work.

But it is likely to discourage study in all except the leaders.

(b) *Disadvantages.*

1. It fails to test individual preparation, power, or skill.
2. It is noisy and boisterous.
3. It trains a few to be leaders and the many to be followers.
4. It gives little help.

TOPICAL OUTLINE

PLACE AND TACTICS OF THE RECITATION

I.—PLACE.

1. The group plan or class plan.
2. The scattered or seat plan. The former has some advantages:
 - (a) It is favorable to class management.
 - (b) It is favorable to class interest.
 - (c) It is favorable to class attention.

II.—CLASS TACTICS.

Code for calling classes.

- (a) ready, (b) rise, (c) march, (d) sit

2. Code for class work.
 - (a) turn, (b) erase, (c) write, (d) face, (e) explain.
3. Code for use of pupils.
 - (a) Raising hand.
 1. Denotes willingness to take part.
 2. Denotes a desire to correct, add to, or to dissent from, answer.
 - (b) Lowering hand.
 1. When some pupil has been designated to recite.
 2. When the answer is satisfactory.

III.—METHODS OF DIRECTING QUESTIONS TO THE CLASS.

1. The individual method.
2. The general method.

IV.—METHOD OF CALLING FOR ANSWERS.

1. Individual Method.
 - (a) Consecutive.
 1. Saves time.
 2. Distributes work equitably.
 3. Destructive of class interest.
 4. May not encourage preparation.
 - (b) Promiscuous.
 1. Promotes class interest.
 2. Adjusts question to suit the pupil.
2. Concert Method.
 - (a) Advantages.
 1. Encourages timid pupils to take part.
 2. Aids slightly in training memory.
 3. Arouses enthusiasm.
 4. Trains a few leaders.
 - (b) Disadvantages.
 1. Fails to test individual preparation, power, or skill.
 2. It is noisy and boisterous.
 3. Trains a few to be leaders and many to be followers.
 4. Renders little aid to the dull child.
 5. May discourage study.

CHAPTER XVI

THE USE OF BOOKS IN THE RECITATION

Books are the best things well used; abused, among the worst.—
R. W. EMERSON.

AMONG the many means employed in the school, text-books occupy an important place, and the aid they render in reaching the desired end is determined by their quality and the use made of them. It is not our purpose to discuss the use of text-books in general, but merely to point out how they may be used to better advantage.

Whatever opinions may be held concerning the use of school books, it must be admitted that their quality has been greatly improved in recent years. In pedagogical plan, in the grade and arrangement of subject matter, and in general attractiveness, they far surpass those of former years.

This improvement is especially noticeable in the books prepared for the lower grades of the elementary school. The whole field of elementary work has been most carefully surveyed. The lines of approach to each study have been marked out and the subject matter graded and arranged so as to lead the child along the lines of least resistance to a complete grasp of the subject.

I. ELEMENTARY ARITHMETIC

This is especially true in the domain of elementary arithmetic. Authors have examined that field from every viewpoint and each has presented what seemed to him a sane and sensible treatment of the subject based upon the principles of modern pedagogy. This has given us a variety of books differing greatly both in matter and arrangement.

These books were made to be used. Their intended use may not always be clear to the teacher, but in the mind of the individuals who prepared them, the use and the purpose of the book not only determined its scope and plan, but actually graded and arranged its subject matter.

We shall not enter upon a discussion of the merits of these various plans. That would lead us too far from our course and into the domains of pedagogical and mathematical discussion. But rather would we point out some of the results that come from the non-use of the elementary text-books and some of those that would follow its proper use. This subject, then, may be considered under two heads:

1. The non-use of the text-book.
2. The use of the text-book.

The Non-use of the Text-book.—It is somewhat surprising that the text-books in elementary arithmetic, prepared with so much care and purchased at such cost out of the public funds, are seldom used by either teacher or pupil. From the time the child enters school until he is able to use a text, the teacher ordinarily discards the book and proceeds to teach the subject according to his own peculiar notions and improvised plans. These plans, or rather absence of plans, consist in writing on the board each day a few disconnected and hastily prepared problems for the child to solve. This furnishes his seat work in number. In the recitation he is asked to solve some of them over again, or such others as the teacher may hastily improvise. Occasionally he is given an oral drill that has neither plan nor system, and that has no relation whatever to the written work. Day after day, and sometimes year after year, this haphazard work proceeds. Such procedure has little to recommend it.

- (a) *It is unsystematic.* It has no plan, no beginning,

no development, no course, no aim, no end. It is a sort of blind-man's buff arrangement that presents to the class, from day to day, the disconnected and unrelated problems the teacher may happen to suggest when the class is to be taught. It lacks arrangement, grade, and order, and is as unsatisfactory as it is unsystematic.

(b) *The work is limited generally to abstract problems.* What it teaches, therefore, is a little abstract number, not arithmetic. By it children finally learn to perform the fundamental operations, but they cannot apply them to the solution of problems that require thought.

The reason for such a condition is readily found. It is so easy to write abstract problems on the board, and requires so much time and labor to improvise and write out concrete ones, that the latter are seldom used.

Abstract problems give skill—that is, ability to calculate; concrete examples give not only skill, but also mathematical power—that is, the power to apply the principles of arithmetic to practical purposes. The former makes the child a good accountant, but not a good mathematician; the latter makes him both. The one trains him to calculate, the other to calculate and to think.

(c) *The little concrete work given is characterized by sameness.* It lacks grade, variety, and completeness. It could not be otherwise under such improvised plans. In grading and arranging the subject matter of the text an author uses many concrete problems of many different kinds, each introduced at the right place to develop the general plan. The teacher who discards the book may not think of a dozen different kinds. His mind is likely to run in certain channels and to suggest only a few types.

The pupils become strong in their ability to solve problems belonging to the types found in the particular mathematical ruts in which the teacher's mind runs, but the general field of concrete work is almost untouched, and the

ability to think out the solution of a problem of a new type is wanting. This may not be the root of all evils in the teaching of arithmetic in the elementary school, but it is the root of some of them.

(d) *This work does not prepare the child for the use of the text-book.* When the pupils have wasted much time and effort in learning to perform the fundamental operations by this improvised plan, they are at last given a text-book; but they have no power to use it, and, although they have been studying number for four or perhaps five years, they must start with the first lesson in the book. In schools where this absence of plan prevails children are often found doing fourth-grade work in abstract number and first-grade arithmetic in concrete work.

The non-use of a text in elementary arithmetic is especially detrimental to the mathematical interests of the children in the rural schools. These schools experience a change in teachers almost annually, and if the text-book is not used as a guide to the work the teacher can have no definite knowledge of the aims and plans of his predecessor and of the scope and character of the work done by him. As a result, the work covering a period of years is unrelated and fragmentary and without that controlling aim that unifies and systematizes it.

Even in the graded school of a town or city the same detached work is likely to follow the non-use of the text. Close supervision, according to a course of study, may tend to minimize these unsatisfactory conditions, but it requires so much time and effort to direct this work that they are likely to appear in the presence of the best supervision. Indeed, in the absence of suitable texts, it would require almost the entire time of a principal in a school of a score of rooms to organize, systematize, and supervise this work.

The Use of the Text.—But the text-book offers a

different plan. It may not be the best, but it is at least a plan, and, although it may be defective, it is certainly far superior to the patched-up guesswork of the ordinary teacher. The proper use of the text-book in this work is most helpful.

(a) *The text-book grades the work.* It puts the right problem in the right place. What to teach next, and how difficult to grade the work, are questions which lie beyond the grasp of the average teacher. They belong to a higher realm of thought than that of the class-room. It is unreasonable to expect the ordinary teacher to answer them. The author may not have worked out the most satisfactory answers to them, but they are better than he could improvise in the presence of his class.

Every text-book answers these two questions. It not only designates the next step, but also grades the subject matter to suit it, presenting both abstract and concrete work in the proportions seemingly necessary to give to the child both skill and mathematical power. Every author has some end in view. He knows that certain steps must be taken in order to attain the end. He, therefore, plans his work and grades and arranges the subject matter according to the requirements of the plan. He not only supplies suitable varieties of concrete work, but strives also to grade them to meet the exact needs of the expanding intellect of the child.

(b) *The text-book gives unity to the work.* The work of to-day must be unified with that of yesterday, and both with that of to-morrow. Lesson must be linked to lesson in the chain of instruction. A number of detached and unrelated problems is not enough. There must be a systematic plan, a controlling aim, a natural development. These are the underlying principles that give scope, character, and unity to a text-book. Every problem is a part of a related whole, and is, therefore, necessary to the completeness of

the work. Something may be added, but unity and completeness demand that nothing shall be omitted. Thus the text-book tends to unify the work and to give to it completeness and proportion.

In the use of the text-book the teacher should present the first lesson, then the second, then the third, and each consecutive lesson in the order given. He may supplement the work at any point, but unity demands that no lesson, no step, and no essential part of the work be omitted. Thus the child moves forward in accordance with the plan of the work until he is able to use the text.

During this period the child must have both seat and recitation work. And if he is too young to use the book the problems written on the board for seat work should be taken from the text of the lesson under consideration, or they should be similar to them. The oral drills and the additional problems given, should supplement the plan of the book rather than deviate from it. The whole purpose of the teacher should be to develop the child's mathematical power as designed in the plan and purpose of the book, and not according to his own peculiar notions. The plan may be defective, but a poor plan is better than no plan.

To throw aside the book is regarded by some teachers as an evidence of wisdom and strength. They reject its use as slavery to text-book formality. This is a mistake. There is no more slavery in it than in following the texts in reading, geography, history, or any other study. Every book arranges a series of lessons or exercises along which the child is to be led to the mastery of a subject and designates at each point what shall come next. It is like a stairway which the child must ascend. Each step is visible from the one below it, and the easiest approach to the next step is from the one on which he stands. The main purpose of a text-book is to point out the next step, to make the ascent to it easy and natural, and there can be no slavery

in accepting this aid so necessary and which can scarcely be expected from any other source. The liberty of the teacher consists, not in rejecting the text, but in presenting its lessons in his own way.

2. ELEMENTARY LANGUAGE

What has been said concerning the use of the text in elementary arithmetic applies with equal force to work in elementary language. The oral lessons that prepare the child for the use of the text should be organized and systematized according to some plan, possibly the one which the child is to use when the book is put into his hand. Improvised plans and unrelated lessons are as much out of place in language as in arithmetic. Aim, grade, order, and plan are just as important in this work as in any other.

It is scarcely necessary to extend this discussion to other subjects, since the text-books in all, save elementary language and arithmetic, are usually followed.

3. IN TEACHING ADVANCED ARITHMETIC

The advanced texts are ordinarily prepared according to the topic plan, and as a rule they are followed. Our desire, then, is not to discuss the use or the non-use of the book, but rather its abuse at certain places, and to present a few thoughts on this subject that seem practical and may prove helpful and suggestive.

Rules and Processes.—In elementary grades processes always precede rules. This is generally the best order also in advanced grades. The first lesson in the study of a particular subject should be directed toward the mastery of the process. Problems are stated, examined, and solved, not to get the answer, but to reveal the process step by step. When the process is fairly well understood, it is well to formulate a rule that may be applied to the solution of the problems. The one is thus made to verify, clarify, and

fix the other. The aim is not only to know the rule, but to understand it through the process.

The mastery of the process is of first importance. It is the grasp of it that will remain and enable the child to formulate the rule when needed. A rule is simply a sign-board to direct the pupil in his work. It is a statement of the necessary steps in a process in their consecutive order, and the pupil who knows these steps can make his own rules. The critical study of the sample solution introducing a new topic will generally reveal the steps in, and lead to the comprehension of, the process.

The mastery of process is the pivot upon which much of the teaching of arithmetic turns. If this part of the work is well done there will be little trouble with the problems that follow.

Text-books in the Class.—The best work will be done in higher grades by prohibiting the use of text-books in the recitation. Many teachers permit the use of books and assign by number, for class recitation, the same problems the pupils have already solved. This plan may be helpful when the teacher expects to emphasize some phase of the work probably overlooked by the pupils, or when it is necessary to have some problem re-solved by a bright pupil for the benefit of those who failed in its solution, but there is little to be gained by having the pupils place on the blackboard the problems already solved and understood.

Constant use of the book in class makes the pupil dependent upon the eye, but fails to develop a quick grasp of conditions through the ear. Both eye and ear must be trained. The preparation of the lesson from the book trains the former, and the recitation should not neglect the latter. Some people seem to be *eye-minded*. They cannot understand conditions until they are presented through the eye by words, diagrams, or drawings. Their ear seem-

ingly has been neglected. Their mind is not alert and quick to grasp conditions presented through the ear.

To read a problem to a child and have him get and hold its conditions is of vital importance in training the mind through the ear. It demands a quick mental adjustment and an intense concentration upon passing words. The camera, when properly focused and adjusted, catches instantly and holds firmly the exact image of the thing presented; so alertness and adjustment of mind through the ear gives exactness and tenacity to memory.

The power to grasp conditions quickly through the ear is most serviceable. A sermon or a lecture is delivered but once; if you do not catch it the loss is yours. The office boy without this power must be told the same thing again and again before he knows it. Children in school fail to understand announcements and assignments of lessons because the ear has not been properly trained. And arithmetic ought to train the mind to adjust itself quickly and to grasp and retain firmly what it hears.

The problem should be read or stated clearly to the pupil. At first it may be necessary to repeat it, but ere long the mind will so adjust itself through the ear that the conditions are grasped when once stated. Such a plan will produce better mathematicians, more independent in thought and action; it will develop alertness of mind and quick grasp of conditions through the ear, and make the memory more exact and tenacious.

Problems used in Class.—The problems solved in the preparation of a lesson should not, as a rule, be used in the recitation. This does not apply when pupils have failed in their attempts to solve certain problems or when some complex feature in a problem is to be examined by the class. But upon the whole the problem material of the recitation should be new, similar to that found in the lesson or in some former lesson, yet differing in some slight

detail, and crisp and fresh with the novelty of newness. These problems may be original—coined by the teacher as occasion demands, dealing with community life and its activities, or they may be taken from the corresponding parts of some other text which the child has not seen.

New things are always full of interest to the child, and the deeper the interest the more favorable the opportunity for instruction. This makes new problems more desirable for the work of instruction than old ones. For the same reason new problem material in drill work is preferable to that which is old. Drill is intended to give skill or to deepen impression; and problems once solved by the pupils have lost part of their value for that purpose.

The opportunity to learn is greater with new problem material than with that once examined. This may not be true with advanced students in the quiet of their study, where concentration of mind and intellect penetrates beyond the depths of former efforts, but it is true in the average class recitation. Thinking is the process by which the mind acquires or learns with or without the aid of the teacher, and in solving over again in the class the problem solved in the seat the mind is likely to *remember* what it did, rather than to *think* out the steps by which the end was reached. The one is a memory, the other a thinking, exercise.

The Treatment of Problems in the Recitation.—Every problem contributes something to the mind that tries to grasp and solve it. The extent of the contribution is determined by the treatment which the problem receives by the child under the direction of the teacher.

Some teachers simply assign problems and have them solved without question, comment, suggestion, or explanation; under such conditions the recitation is almost a failure, and the results that come to the child for his work are little beyond what came from study.

In order to give the highest and best reward for the effort, problems should be clearly grasped, correctly solved, and critically examined and explained.

(a) *To grasp and understand a problem is the first step.* As it is stated, the pupil catches the facts and writes on the board enough of them to aid the mind in keeping before it a clear statement of the conditions. The first stage in this step is to comprehend the conditions. The second is to understand them—that is to interpret them fully through what the mind already knows of the processes involved in them. This second stage is vital. It is at this point that the mind does its best thinking. The conditions are examined and analyzed. The mind, through inductive and deductive reasoning, reaches the right conclusion, and the pupil sees clearly, not only the problem, but also how to solve it. Every problem is a key to its own solution just as soon as the student understands its conditions through a knowledge of the processes involved in its solution.

(b) *The second step is to work out in neat and accurate form the solution.* Accuracy and neatness are virtues in other fields than mathematics, and children should be trained into those habits by demanding them in the solution of every problem. Calculation must be exact, statement clear and definite, and the consecutive parts of the work presented according to the demands of analysis and logic.

The first step must always precede the second. The knowledge that guides must always go before the effort that executes. The mind must always go in advance of the hand.

Occasionally the operation of these steps, in separate periods of time, is very marked. The pupil sometimes actually pauses in external work in an effort to know what to do. It is useless to proceed at random or by guess, and

the hand ceases its labors while the mind tries to discover the light that is to guide it aright. On such occasions it is not difficult to see that the first step precedes the second.

But sometimes the period between them is so short that they seem to be almost simultaneous. A clear grasp of conditions and a definite knowledge of what to do may flash across the mind instantly, when it discovers in a moment what will require minutes to execute. But whether these periods seem consecutive or simultaneous, it is evident that the mental effort that guides must always precede the mechanical one that executes.

(c) *The final step in the treatment of a problem is its critical explanation as found in the solution.* Here, as in the examination of written work, the burden of criticism must be put upon the class, the teacher merely adding what the pupils overlook. This is the teacher's opportunity to give needed instruction and to train the child in correct habits of thought and expression. If the teacher is ever to aid the child in developing a clear, analytic, logical mind, strong in inductive and deductive thought, this is one of the important points at which such aid must be given.

What to do with the Unsolved Problems.—If a child is given a clear and definite knowledge of the process and principles he will be able to solve most of the problems. But occasionally with average students and frequently with the dull ones, there are problems beyond their capacity to solve. What to do under such conditions is a question as practical as it is important. To this question three answers may be given.

(a) *The teacher may solve the problem for the child or have some pupil do so.* If in addition to this such instruction is given as will enable the learner to comprehend it, some good will result from such aid. But to solve the problem is of little service unless the pupil will himself try to understand its conditions in the light of the solution.

(b) *The teacher may tell the pupil how to solve the problem.* This, too, is of little value to the child. And if this is all that is done it is scarcely worth the time it takes. But if the teacher explains the steps taken in the process of solution, so that the child fully understands them, this aid may be made most serviceable.

(c) *The teacher may lead the child to understand the conditions of the problem and the processes involved until the learner discovers for himself how to solve it.* This is the best aid the teacher can render. Indeed, it may generally be regarded as unwise either to solve the problem or to tell how it should be done.

Every problem fully comprehended suggests its own solution. The point of attack for the teacher, then, is the conditions of the problem, not its solution. Examine them and the principles and processes by which the problem is to be solved. As soon as the learner fully understands them, the light dawns from within and he discovers what to do. The key to the situation at this point is not what you do for the child or what you tell him to do, *but his own thought*. The source of his power is within. And the moment he interprets mathematically the conditions of the problem with what he knows of the process and the principles involved the difficulty will disappear.

To solve a problem for the child, to tell him how to solve it, and do nothing more, gives little strength of mind, suppresses the spirit of self-helpfulness, and tends to make him a timid mathematical weakling, utterly dependent upon others, and always willing to follow because he is unable to lead. But to throw light on the conditions of a problem, and on the principles and processes involved, gives that strength of mind that comes from vigorous thought and concentrated effort; that satisfaction and encouragement which spring from discovery; and that calm confidence and self-reliance which come from tested strength and final

victory. As long as a child clings to a chair in learning to walk he will develop little strength and steadiness of limb. These come in the largest measure from self-directed efforts to stand and walk without external aids. So in mathematics the best results come, not from seeing what others can do or from being told what to do, but rather from individual discovery and self-directed mental effort. It is the teacher's province to explain conditions, principles, and processes; but *discovery* and *achievement* belong to the child, and to take from him the joy of the former and the strength and self-reliance that come from the latter is as unwise as it is unprofitable.

4. ELEMENTARY HISTORY OR GEOGRAPHY

The fourth, fifth, and sixth grades are critical periods in the child's school life. In the three years preceding them he has learned to read, to write, and to spell; he has laid the foundation for his work in language and number; and by oral instruction has acquired some knowledge of elementary geography through the observation of his environment, and of history through story and biography.

In these grades he is to face a new problem. He has *learned to read*, and he is now to *read to learn*. The elementary texts in geography and history are given to him to be studied. His ability to read is to be the medium through which he is to acquire knowledge in these and other fields and by which he is to train himself in the art of study. Up to this point he has been acquiring the *tools* with which he is to work; now he is to begin to *use* them, and the problem is how this may be done in order to become skillful in their use, and at the same time make them sharper, stronger and better instruments of service.

Two methods of procedure are open to the teacher at this point, and the one adopted will determine to some extent the progress of the child in the study and in the art

of study, as well as the extent of his likes or dislikes for both. The first of these may be called the *irrational* and the second the *rational* method.

The Irrational Method.—By this method the child, without aid, suggestion, or direction, prepares the lesson from the text as best he can, and the teacher, instead of trying to teach in the recitation, simply examines him. The child gets little from the book, and the teacher gets even less from him. And since an examination trains the child to give rather than to get, the periods of preparation and recitation are largely wasted, first, because the child has not acquired a knowledge of the lesson, and second, because he has not increased his power to study. This method of procedure invites failure since the child does not know how to study and the teacher fails to teach. The results of such methods are as apparent as they are unsatisfactory.

The Rational Method.—Under this method the teacher is careful to prepare the way for text-book work by suitable oral instruction, and to assign the lessons in such a way as to aid the child in their preparation. He is very careful to see that the major part of the recitation is given to *actual instruction* rather than examination. Indeed, many of the recitations are study periods in which *the teacher studies the lesson with the class*. Such periods differ but slightly from what is known as the study recitation, which is only a phase of the teaching part of the recitation. Both aim to have the child see and understand the subject matter, but in addition to this the study period aims also to train the child in the art of study.

The following paragraph from one of the elementary histories with the questions, answers, suggestions, and comments will serve to illustrate just what we mean when we speak of trying to train pupils in the art of study

by studying the lesson with them either in or out of the recitation :

“THE BEGINNINGS OF NEGRO SLAVERY (1619).—The year 1619 is one of the most famous in the annals of Virginia. Then it was that a Dutch vessel landed at Jamestown and sold twenty negroes to the planters. At this time slavery existed in all the nations of the world, and found its way into all the English colonies. In Virginia the soil, climate, and chief occupations especially favored it.”

The pupils with text-books in hand are brought forward to the place of the recitation. Instead of examining them, the time of recitation is devoted to studying the lesson under the direction of the teacher. By way of introduction and to prepare the minds for what is to follow, the teacher reviews briefly the history of the colony. He inquires about its settlement, its location, the nature of its climate, the quality of its soil, the character of its people, and any other knowledge that will lead directly to the lesson under consideration. This is preparation—the first step in the recitation.

The pupils now open their texts and under the teacher's direction examine the paragraph before them. The first thing is to lead all to understand, through the use of dictionary, discussion, or illustration, the meaning of the terms “slavery,” “famous,” and “annals.” The remaining words in the text are probably within their comprehension. Then comes the formal study of the text, directed by such questions as the following: What is the title of this paragraph? In what colony did slavery begin? How did the negroes get to Jamestown? What was done with them after their arrival? Why did the planters purchase them? What was the condition of the world at that time with reference to slavery? What conditions in Virginia favored slavery? Who should be held responsible for the introduction of slavery into the colony? What do

you think of the part played by the Dutch in this matter? By the planters? By the negroes?

As each question is asked the pupils run their eyes over the paragraph to find the answer. The tactics used are the same as in the recitation. When the pupils discover a satisfactory answer to one question another is asked.

The purpose of these questions is not so much to fix truth or to arouse profound thought—the pupils are scarcely ready for this—but rather to *direct them through the ear to discover with the eye the leading points in the paragraph*. Thus the entire lesson, topic by topic, is studied.

This sensible method of procedure has some advantages worth noticing.

(a) *It removes as far as possible all causes for discouragement by training the child to help himself*. And, as Horace Mann once said, “The teacher helps his pupils most who helps them to help themselves.”

(b) *It is likely to develop in the child a love for the study pursued and for the art of study*. Both of these results are most desirable. The child who finds pleasure in the art of study and in the knowledge that lies in some particular field has, through self-improvement, the keys of culture already in his hand. The love of history, for instance, is more valuable to the child than all the knowledge of it he can ever acquire in the school. The treasure in this domain is so abundant and so rich, and the few facts presented in school are so meagre, that the love that will lead the child to survey this in after life and make part of it his own is a leading object of its study. A single chapter in the school history about Columbus may open the gateway to the great field where thirteen thousand volumes on the life and work of the great discoverer may be found to enrich the mind and gratify the cravings of the history-loving student. The love of truth and the love of study

are at once the basis of student habits and the foundation of great scholarship.

(c) *It trains in the art of study.* This is the great contribution of this rational method. Every child's first attempt at study is to memorize the lesson. To him knowledge is a thing of words, not thought; of the memory, not of the mind. Unaided, children pursue this phantom for years before they discover their mistake and acquire any particular proficiency in the art. By this method, guided by a skillful teacher, they soon discover that to study is to see and understand the leading points, to grasp the vital thought in the text, and not to memorize the words.

In first taking up the texts in elementary history and geography four such lessons are not too many each week. Thus to study the lessons with the class four times each week, and on Friday review the subject matter of them with the books closed, is an excellent plan. And the aim should be not so much to give the pupils an extensive knowledge of the facts, but rather to lead them to love the subject and to train them to get thought from the printed page.

TOPICAL OUTLINE

THE USE OF TEXT-BOOKS IN THE RECITATION

I.—IN TEACHING ELEMENTARY ARITHMETIC.

1. The non-use of the text-book.

- (a) It is unsystematic.
- (b) It teaches generally only abstract number.
- (c) Its concrete work is characterized by sameness.
- (d) It does not prepare for use of text-book.

2. Text-book in class.

- (a) It grades the work.
- (b) It gives unity, system, variety, and completeness to the work.

II.—IN TEACHING ELEMENTARY LANGUAGE.

1. Follow a plan similar to that suggested in elementary arithmetic.

III.—IN TEACHING ADVANCED ARITHMETIC.

1. Processes before rules.
2. Text-book in class.
3. Problems used in class.
4. The treatment of problems in the recitation.
 - (a) Understand the conditions.
 - (b) Solve the problem.
 - (c) Explain the problem.
5. What to do with unsolved problems.
 - (a) The teacher may solve them.
 - (b) The teacher may tell the child how to solve them.
 - (c) The teacher may lead the child to grasp the conditions and to discover the solution.

IV.—IN TEACHING ELEMENTARY HISTORY OR GEOGRAPHY.

1. The irrational method.
 - (a) It wastes time and effort.
 - (b) It gives little progress in the subject or in the art of study.
 - (c) It gives dislike for the subject and for the art of study.
 - (d) It brings discouragement to teacher and pupil.
2. The rational method.
 - (a) It removes discouragement.
 - (b) It develops love for the subject studied and for the art of study.
 - (c) It trains in the art of study.

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